WHITE-TAILED DEER

Historical Perspective

White-tailed deer (*Odocoileus virginianus*) were reported to be quite abundant when European settlers arrived in Iowa in the early 1800's. Although the clearing and cultivating of land for agriculture may have initially improved the suitability of the landscape for deer, uncontrolled exploitation for food and hides rapidly reduced deer numbers. By 1880 deer were rarely sighted in much of the state and in 1898 the deer season was legally closed. By this time deer had been virtually eliminated from all parts of the state.

Re-establishment of deer into the state can be traced to escapes and releases from captive herds and translocation and natural immigration from deer herds in surrounding states. A conservative estimate of the population in 1936 placed statewide numbers at between 500 and 700 animals. This small herd grew steadily. By 1950 deer were reported in most counties and the statewide estimate topped 10,000. Concentrations in some areas were beginning to cause problems by damaging agricultural crops. In response to these problems the first modern deer season was held in December of 1953 and 4,000 deer were killed. The harvest exceeded 100,000 for the first time ever in 1996. The harvest approached 200,000 in 2004 and the deer herd is currently estimated to be about 360,000 before the fawning season.

Although deer are frequently associated with forested areas, deer are very adaptable and will utilize many different types of habitat as long as the area provides adequate cover. Examples of these types of areas include brushy draws and fence lines, marshes, and grassy areas like those provided by the federal Conservation Reserve Program (CRP). Standing corn also provides ideal habitat for part of the year since it provides food, cover and easy travel lanes. Urban environments may also prove to be good habitat for deer, especially if there are green belts, parks or other natural spaces nearby.

Deer utilize almost all plants for food at one time or another during the year. Deer feeding habits can best be described as being widely selective as deer will sample many plants while feeding but often utilize a single, very palatable source of food for the majority of their diet. Preferred foods also change through the year in response to changing metabolic demands.

The whitetail's ability to thrive in Iowa is likely the result of an abundant, reliable food source and a winter climate where snow depths rarely exceed 12" for a prolonged length of time. These factors combine to allow deer to come through the "winter bottleneck" in excellent condition. The excellent nutrition also enables deer to have high reproductive rates. Many does in Iowa have a single fawn their first year and 2 fawns each subsequent year. Deer in the wild can maintain these high reproductive rates until they are past 10 years of age. Research in Iowa has found that 8 to 12% of adult does have 3 fawns.

Another reason that deer do so well in Iowa is that they are very mobile. Although many deer never move far from the area where they were born, a significant number (10-20% on average) leave and travel to new areas before establishing a core area. These core areas may change seasonally with deer shifting between wintering areas and fawning

areas. These movements allow deer to fill voids left open due to deaths and changing habitat. Thus deer easily pioneer into new areas when habitat is suitable. The highest rates of movement occur during 2 periods of the year. The first is in the spring when does move to their fawning areas. Many of the previous year's fawns are forced to find areas of their own at this time. The second period is in the fall during the breeding season. The breeding season or rut begins in mid-October and runs through mid-January, although the peak of activity occurs in mid-November.

Careful management of deer populations by man has also played an important role in allowing deer numbers to return to the levels enjoyed today. Management consists primarily of regulating the doe harvest since hunting provides the major source of mortality for deer in Iowa today. Unchecked, Iowa's deer herd could grow at a rate of 20% to 40% each year. At this rate, deer numbers would double in as few as 3 years. With Iowa's agricultural crops providing abundant food, densities could potentially exceed 100 or more deer per square mile before natural regulatory mechanisms would begin to affect deer health and slow the rate of reproduction. Deer numbers this high would cause severe economic hardship to Iowa's landowners as well as alter the natural vegetative community. Maintaining a deer population in balance with the wants and needs of the people in the state is a difficult task and hunting is the only viable management option to achieve this goal.

2004-2005 Hunting Season Results

A record number of deer were killed during the 2004-2005 season. The estimated kill was 194,512 (Table 1.4) which is about 6% higher than in 2003 (Table 1.2). The previous record harvest was in 2003 when an estimated 182,856 deer were taken. Almost all of the increase was due to an increased kill of antlerless deer. The number of does killed increased by about 7,415 or 8% over 2003. Most of the increase was due to the extra 30,500 antlerless licenses available during all seasons as well as during the January season. The estimated number of antlered deer in the harvest has stayed about the same since 2000 (Fig. 1.8).

The season framework was basically the same as last year (Table 1.1). This was the ninth year for the special January season and the 2nd year it was open in all 99 counties. Landowners in these counties could get a free tag for this season in addition to the normal free license and the regular tags a deer hunter could legally obtain. For the fourth year hunters in both shotgun seasons, the late muzzleloader season and the bow season were allowed to obtain a bonus antlerless license for all 99 counties in Iowa. For the first time hunters in all seasons could obtain an unlimited number of antlerless licenses. These licenses were restricted to a specific county.

About 2,000 deer were taken during special management hunts in urban areas and state and county parks and another 1,700 deer were taken on special depredation tags issued to landowners with damage problems.

Five of the top 10 counties for total kill were in the northeast corner of the state. Clayton was the top county for total kill with 8,436 deer or about 10.8 per square mile of area (Table 1.5 & 1.6). Osceola county had the lowest kill with an estimate of 190 deer or only about 1.0 deer per 2 square miles.

The relative precision of the harvest estimates from the 9 separate postcard surveys ranged from ±2% for first season

shotgun hunters to ±11% for the youth season. The relative precision for the doe harvest ranged from ±4% for first season shotgun hunters to ±20% for the youth season. A total of 50,683 license holders were sampled with 30,032 responses returned. This is a response rate of 60%.

Shotgun Season

The estimated kill during the shotgun seasons was 2% higher than the estimate for 2003 (Table 1.2). Most of the increase was due to increased number of licenses being issued. Success rates were a little lower than in 2003. This was the second year that first season shotgun hunters could purchase an antlerless license and the first year that hunters could purchase unlimited antlerless licenses for the regular deer seasons.

Antlered bucks made up about 38% of the total kill, while does made up 50% of the kill. The rest were buck fawns.

There were an estimated 79,077 hunters (paid licenses only) in the field during the first season and they killed 57,974 deer, while 56,878 hunters tagged 39,856 deer during the second season. This translates to a 70% success rate for first season hunters and 69% for second season hunters.

Does made up the largest proportion of the kill during both seasons. Forty six percent of the kill were does during the first season while does made up 56% of the deer tagged during the second season. Antlerless deer made up 57% of the kill during the first season and 70% of the kill during the second season. Hunters killed about 3% fewer antlered bucks during the shotgun seasons.

Only 13% of the paid hunters during the first shotgun season purchased at least 1 antlerless license for the shotgun season. Nearly 20% of the second season shotgun hunters purchased at least 1 antlerless license. First season hunters had an average of 1.18 paid licenses while second season hunters had an average of 1.24 paid licenses.

Hunting pressure (Fig. 1.1) was generally higher during the first season in most counties. About 58% of the hunters with paid licenses hunted during the first season. Highest hunter numbers were in eastern and southern Iowa during both seasons.

Deer kill (Fig. 1.2) was highest in eastern and southern Iowa during the first season and in the eastern parts of the state during the second season.

Success rates (Fig. 1.3) were good across most of the state in both seasons. Hunters in almost all counties had success rates greater than 60% especially during the first season. The only exception was in the northwest corner of the state.

Does made up less than 50% of the kill in most counties during the first season (Fig. 1.4). However does made up over 50% of the harvest in most counties during the second season.

First season hunters averaged 2.8 days in the field, while second season hunters averaged 3.9 days in the field.

Although the lack of precision of the county estimates (Table 1.5 and 1.6) makes it difficult to evaluate the kill in individual counties and determine whether management objectives are being met, it is possible to make some generalizations at a larger scale. Overall, regulations appear to be fairly effective in allowing more deer to be taken in southern and eastern Iowa (Fig. 1.5). Changes for 2004 also appear to have increased the doe harvest (Fig. 1.6) as does make up over 50% in most counties.

Bonus January Season

For the second year the special January season was held in all 99 counties

in Iowa to help reduce deer numbers. All licenses issued for this season were for antlerless deer only. A total of 23,313 licenses were issued, which is 28% more than last year. While 53% of the hunters who purchased one of these licenses reported that they actually tagged a deer only 29% of those with free licenses reported that they used them.

The kill during this season increased the total kill by 5% and doe kill by 8% statewide but the impact in some counties was much greater. The harvest increased the county kill by up to 20% and the doe kill by up to 30% in some counties in southern Iowa. Hunters reported that 81% of the deer taken were does, 14% were buck fawns and 5% were bucks that had shed their antlers. The incidental kill of these shed antlered bucks increased the number of adult bucks killed by 8/10 tenths of 1%.

Archery

A record number of deer were taken by archers in 2004. The reported harvest of 31,593 was 13% higher than the previous record kill reported in 2003 (Table 1.4). An increase in the number of licenses issued, especially hunters purchasing extra antlerless licenses were the main reason for the increase. Success rates on the regular archery licenses went from 49% in 2003 to 46% in 2004 (Table 1.2). Hunters reported that 52% of the antlerless licenses were used to tag a deer.

Nearly 30% of the bowhunters purchased at least 1 antlerless license for the bow season. This was the highest proportion for any group of hunters. Archers on average had 1.44 paid licenses per hunter.

Fifty four percent of the deer taken by archers were male and 47% were antlered bucks. Archers averaged about 18 days in the field in 2004. The average archer hunted 34 days to bag a deer.

Muzzleloader

The estimated kill during the early muzzleloader season was 11% higher than reported in 2003. Increased numbers of licenses and higher success rates were the main reason for the increase. Hunters were allowed to purchase an unlimited number of antlerless license for this season for the first time.

About 59% of hunters reported that they tagged a deer. Bucks made up 55% of the kill, with antlered bucks making up about 45% of the total (Table 1.8). Hunters averaged about 4.6 days in the field.

Twenty one percent of the paid hunters in the early muzzleloader season purchased at least 1 antlerless license for the early muzzleloader season. Early season muzzleloader hunters had an average of 1.23 paid licenses.

The kill during the late muzzleloader season was about 12% higher than in 2003. The main reason was an increase in the number of licenses that were issued. Most of the increase was due to the extra antlerless licenses that were issued.

Over 60% of the deer taken were does and only 24% of the deer killed during the late muzzleloader season were antlered bucks. Hunters averaged about 6 days in the field.

Forty two percent of the paid hunters in the late muzzleloader season purchased at least 1 antlerless license for the late muzzleloader season. In fact, 31% of the paid late season muzzleloader hunters only had antlerless licenses. Late season muzzleloader hunters had an average of 1.26 paid licenses.

Nonresidents

Of the 6,000 any-sex licenses issued, 3,122 or 52% went to hunters during the shotgun seasons, 2,102 or 35% to bowhunters, and 773 or 13% to late season muzzleloader hunters. An additional 2,455 antlerless licenses were issued. Of these, 1,385 went to hunters during the shotgun season, 643 went to bowhunters, 78 went to late season muzzleloader hunters and 349 went to hunters participating in the holiday season that ran from December 24 to January 2.

About 58% of the shotgun hunters, 50% of the muzzleloader hunters and 46% of the archers were successful in tagging a deer. Less than 15% of the deer killed by nonresidents with any-deer licenses were does. Nonresidents spent an average of 5.6 days in the field. Nearly 60% of the nonresidents reported that they were hunting with an Iowa resident.

Special Youth/Disabled Hunter Season

The number of licenses issued for this special season was 12% higher in 2004 than in 2003. The hunt is restricted to youths 12 through 15 years old or hunters who are disabled. The young hunter had to pass a hunter safety course and had to be accompanied into the field by an adult. Only 90 licenses or roughly 2% of the total were issued to disabled hunters.

About half of the hunters were successful in bagging a deer. Slightly less than half of the deer taken were antlerless deer. These hunters spent an average of 4.3 days in the field.

Special Deer Management Zones

Special management hunts were conducted at 24 locations in 2004-2005 (Table 1.10). These hunts are designed to meet the management needs of areas such as state and county parks and urban areas that are not suitable to be opened to general regulations. Most deer taken were antlerless and deer tagged did not count against the hunters regular bag limit. Most hunts were very successful in removing deer in these problem areas. An additional 2,484 tags were issued in depredation situations where hunters killed another 1,706 deer. This is a little higher than in 2003.

Population Surveys

Three techniques are used to monitor deer population trends in Iowa. These are 1) an aerial survey conducted in January - March after the deer seasons are complete, 2) a spotlight survey conducted in April, and 3) a record of the number of deer killed on Iowa's rural highways throughout the year. All of these surveys correlate well with the reported harvest over the last 15 years and appear to provide reliable long-term trend indices. However, none of these surveys can be considered absolutely reliable predictors of annual changes in the population because of high variability in the survey conditions.

Deer populations for the state as a whole appear to have increased during the past 3 to 4 years (Fig 1.7). All 3 surveys are higher than they were during the last time deer numbers peaked in the late 1980's (Table 1.9).

The aerial survey conducted after the 2004 hunting season (Jan-Mar 2005) was down about 15%. Conditions for this survey were fairly good in most areas and similar to what they were in 2004. The trend in aerial counts was up slightly over the past 3 - 5 years. There has been a lot of variability in the counts during this period.

The number of deer killed on rural highways increased by about 12% in 2004. When this number is adjusted for the increase in vehicle miles driven (kill per billion miles), the increase was 11%. In

general the trend in the number of roadkills has been slightly upward over the past 3 - 4 years.

The number of deer seen per 25 mile route on the spotlight survey increased by about 4% in 2005. The mean number of deer reported per route is over 60% higher than those recorded in the late 1980's. However part of this increase was due to a change in the placement of the routes in 1994 and 1995. The trend over the past 5 years is up as well.

Outlook for 2005

Hunters will see several changes in the 2005/2006 deer seasons. Regulations will again allow all hunters to take deer of either sex in both shotgun and muzzleloader seasons in all counties. These regulations may decrease the number of hunters that hunt during the second shotgun season.

The biggest changes for 2005 are designed to encourage hunters to kill more antlerless deer. Antlerless licenses will be available in every county for the fifth year and the antlerless quota was increased for some counties in the eastern and southern parts of the state. If hunters buy all of the antlerless licenses a total of 103,000 antlerless licenses could be issued for 2005 which is 19,000 more than in 2004 and nearly 80,000 more than were available in 2002.

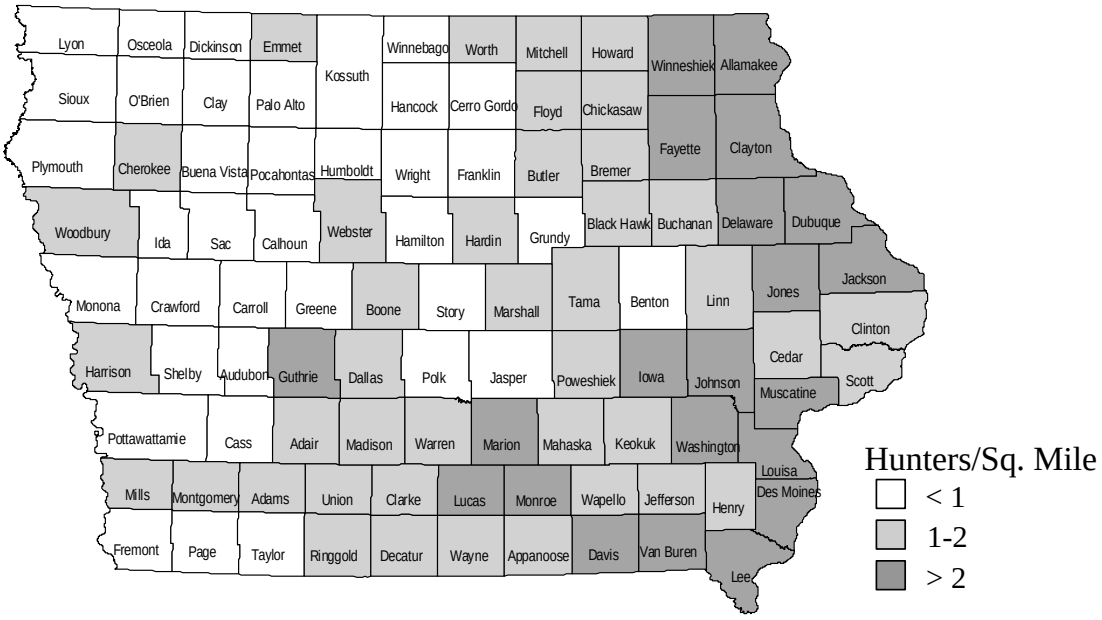
In an attempt to sell all of the licenses 2 new seasons will be added in 2005/2006. The first season will be for antlerless deer and run for 3 days beginning the Friday after Thanksgiving (Nov 25 – 27). Licenses for this season will go on sale on November 12th. All hunters are eligible for this season and all shotguns, muzzleloaders, pistols and bows that are legal in other seasons will be legal in this season. The bow season will not close. In 2004 45 counties would have sold out their antlerless quota and would not have had any licenses available.

The second new season is actually a 1 week extension to the bonus January season for the bottom 2 tiers of counties. Hunters who purchase an antlerless licenses for these counties for the bonus January season will get an extra week to hunt and centerfire rifles over .24 caliber will be legal weapons during the final week.

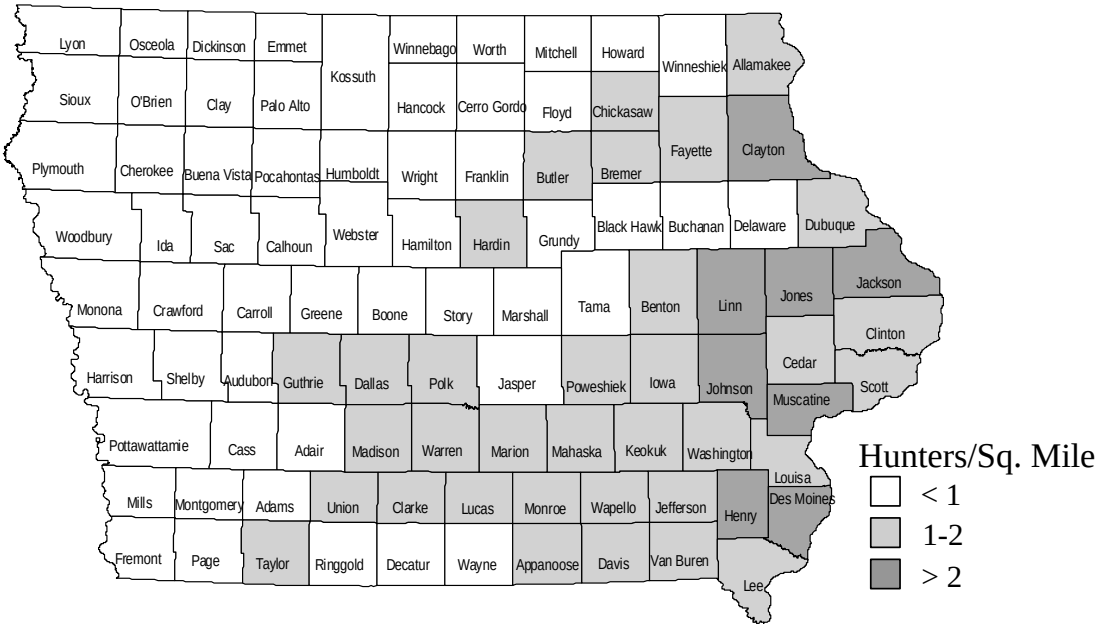
Hunters again will be allowed to obtain antlerless licenses in every season. The limit on the number of licenses a hunter can obtain is 3 before October 1 and unlimited after that date. All 99 counties will be open during the bonus January season again this year. The objective of these regulations is to bring deer numbers back to the 1995-96 target level.

White-tailed Deer
(doe)

Fig 1.1 The average number of hunters/square mile in each county during the 2004 shotgun season. Hunters with free landowner/tenant licenses are not included since their licenses were valid for both seasons.

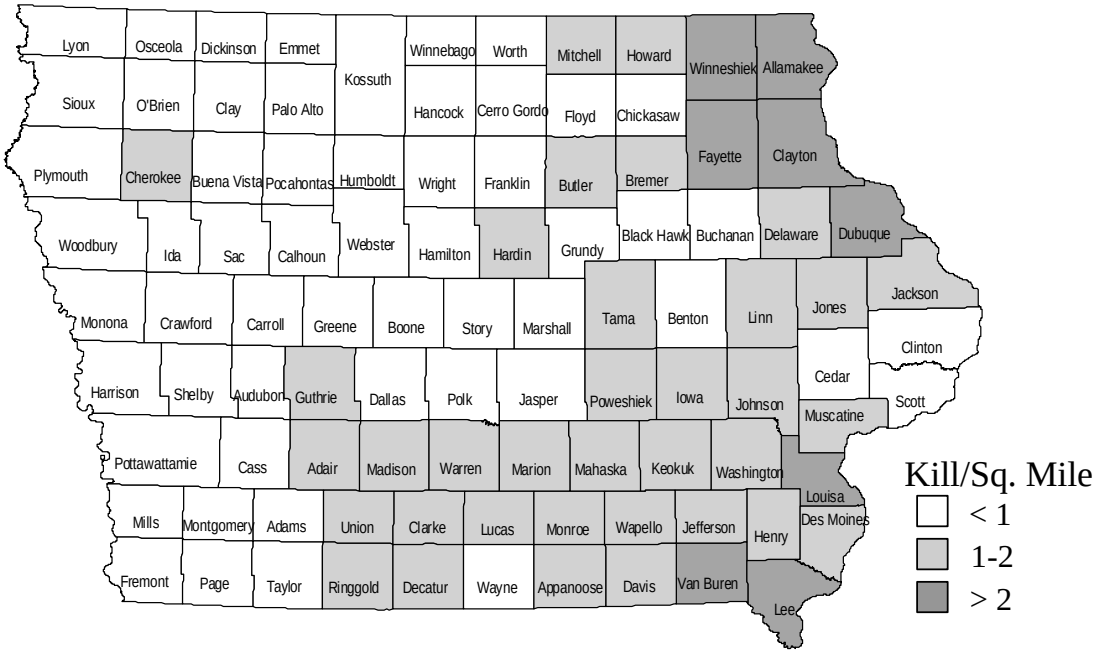


Season 1

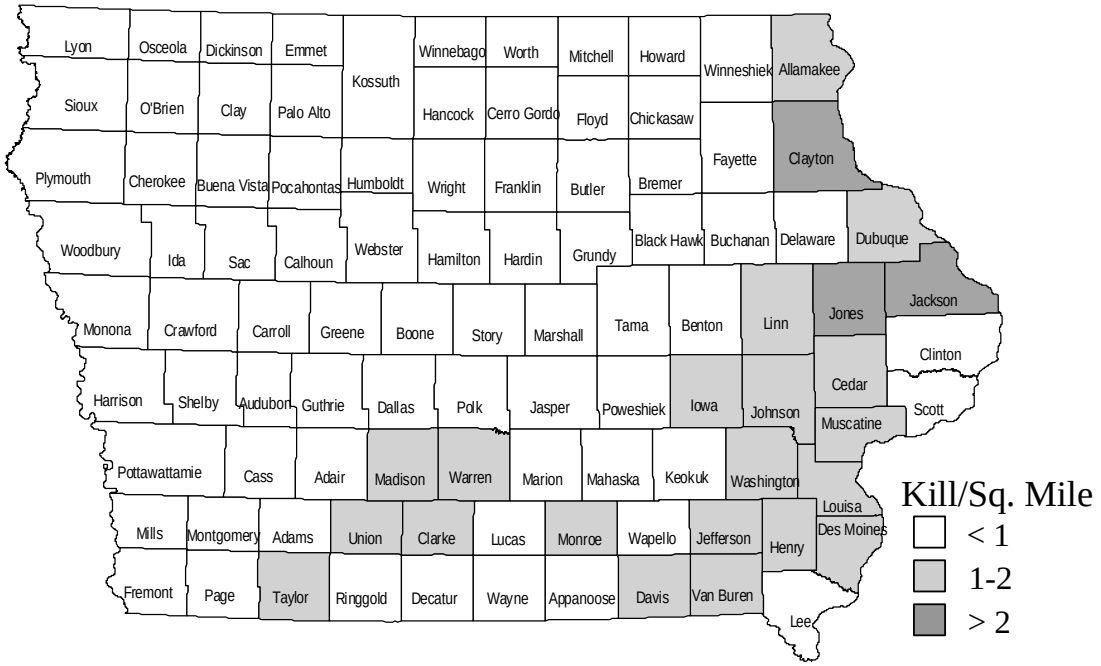


Season 2

Fig 1.2 The average number of deer killed/square mile in each county during the 2004 shotgun season. The kill by hunters with free landowner/tenant licenses was not included since their licenses were valid for both seasons.

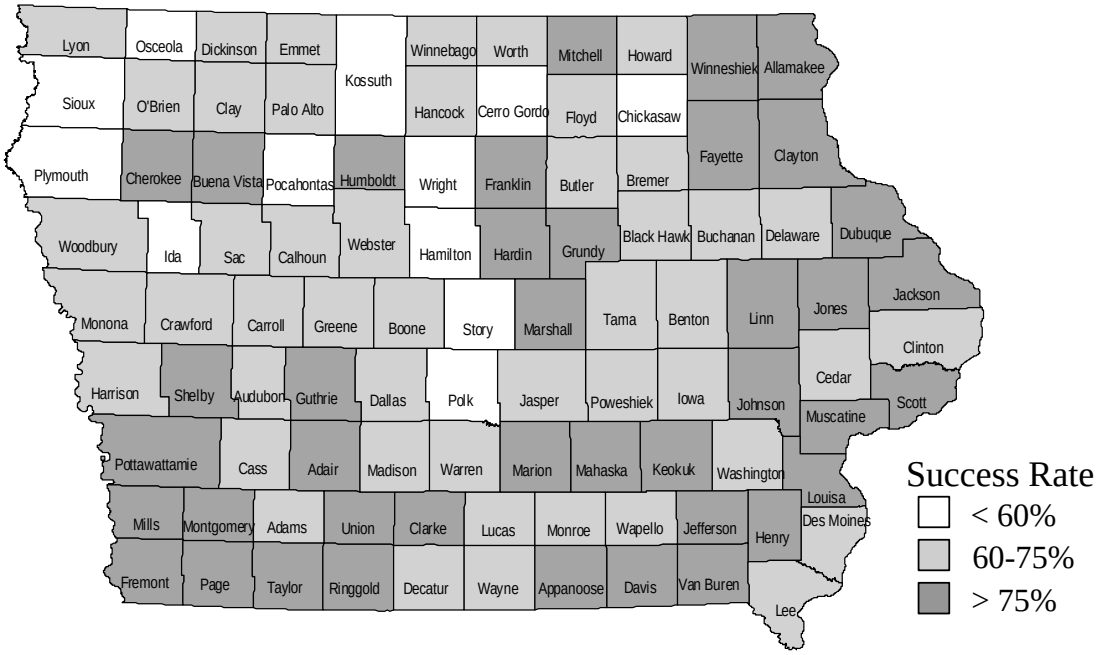


Season 1

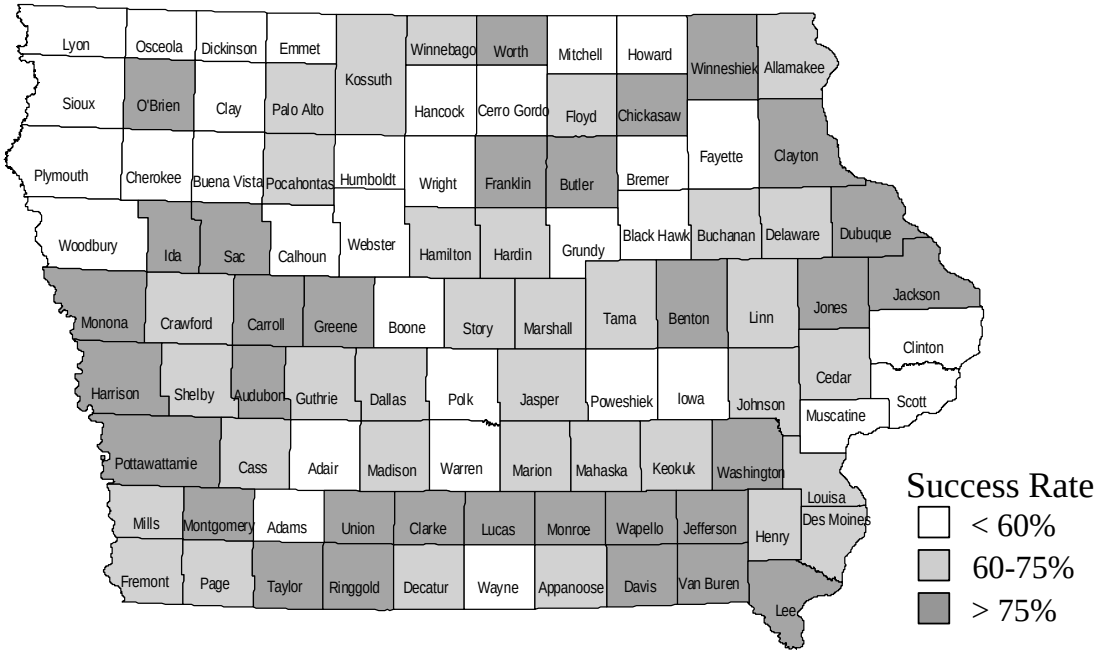


Season 2

Fig 1.3 The average success rate for hunters with paid licenses in each county during the 2004 shotgun season. Hunters with free landowner/tenant licenses are not included since their licenses were valid for both seasons.

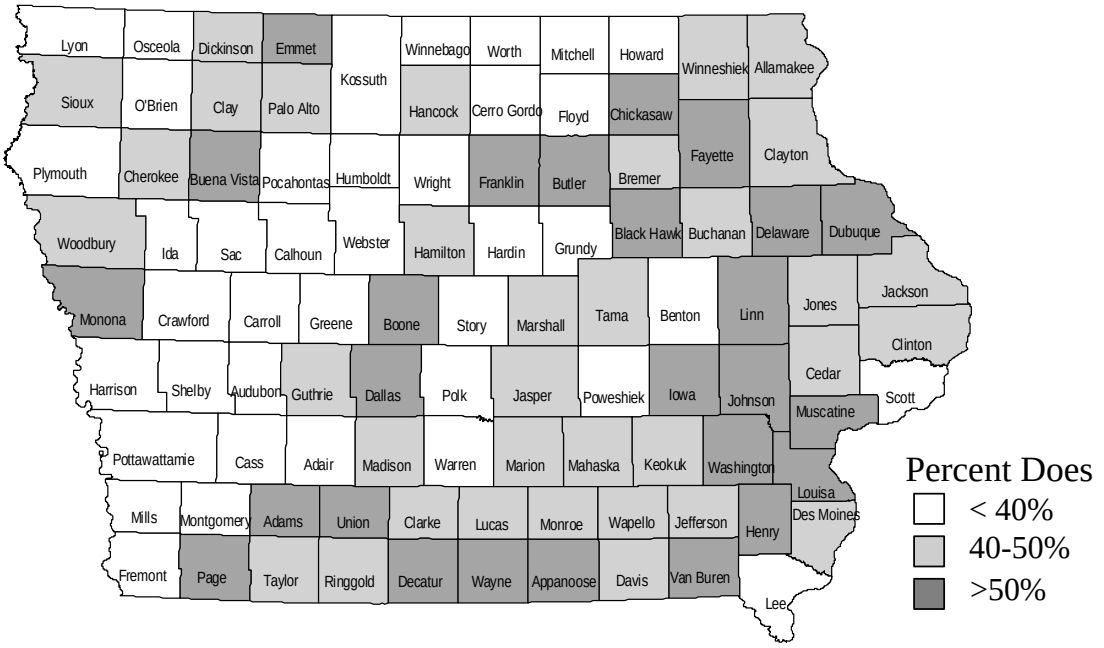


Season 1

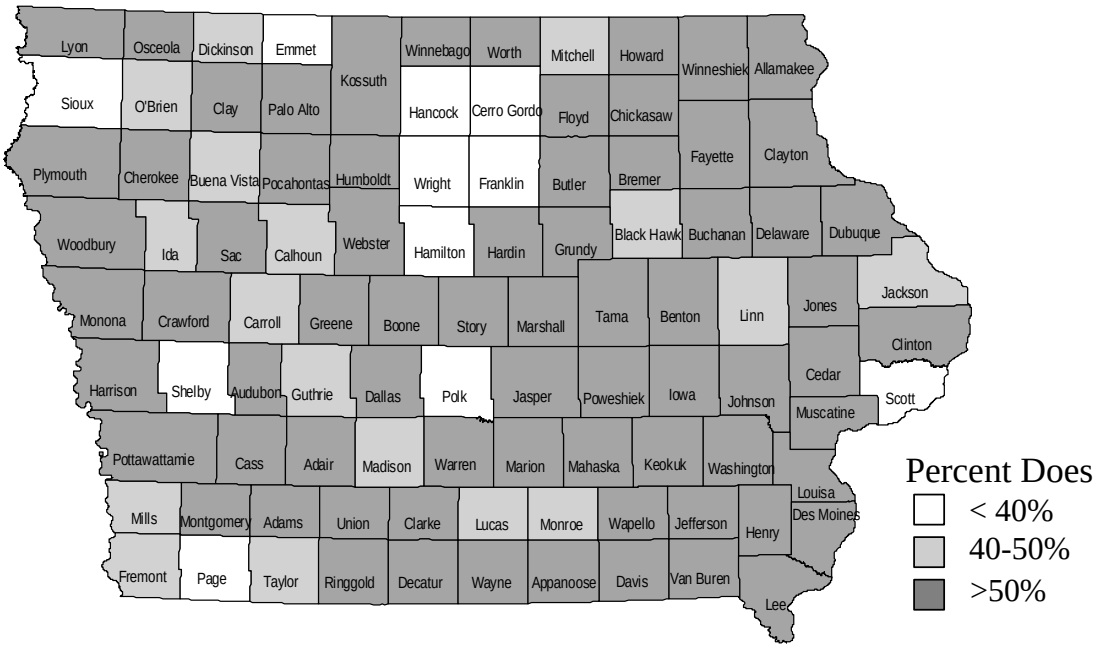


Season 2

Fig 1.4 The proportion of the harvest by hunters with paid licenses that were does during the 2004 shotgun season. The kill by hunters with free landowner/tenant licenses are not included since their licenses are valid for both seasons.



Season 1



Season 2

Fig 1.5 The average number of deer killed per square mile in each county during the 2004 - 2005 deer season.

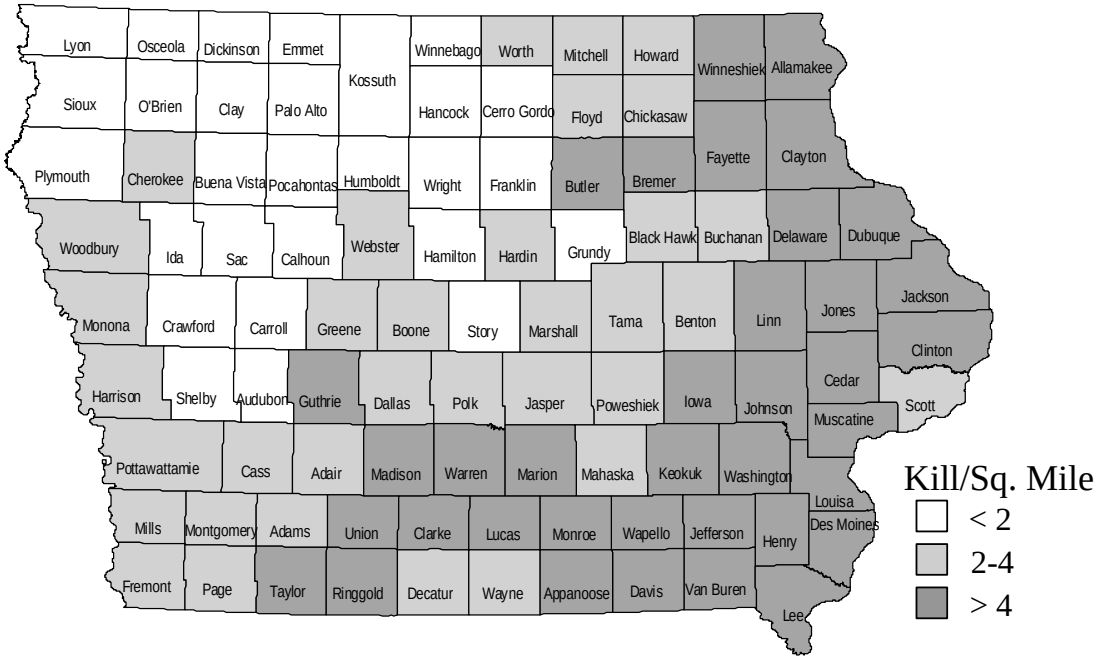


Fig 1.6 The proportion of the harvest that were does in each county during the 2004-2005 deer season.

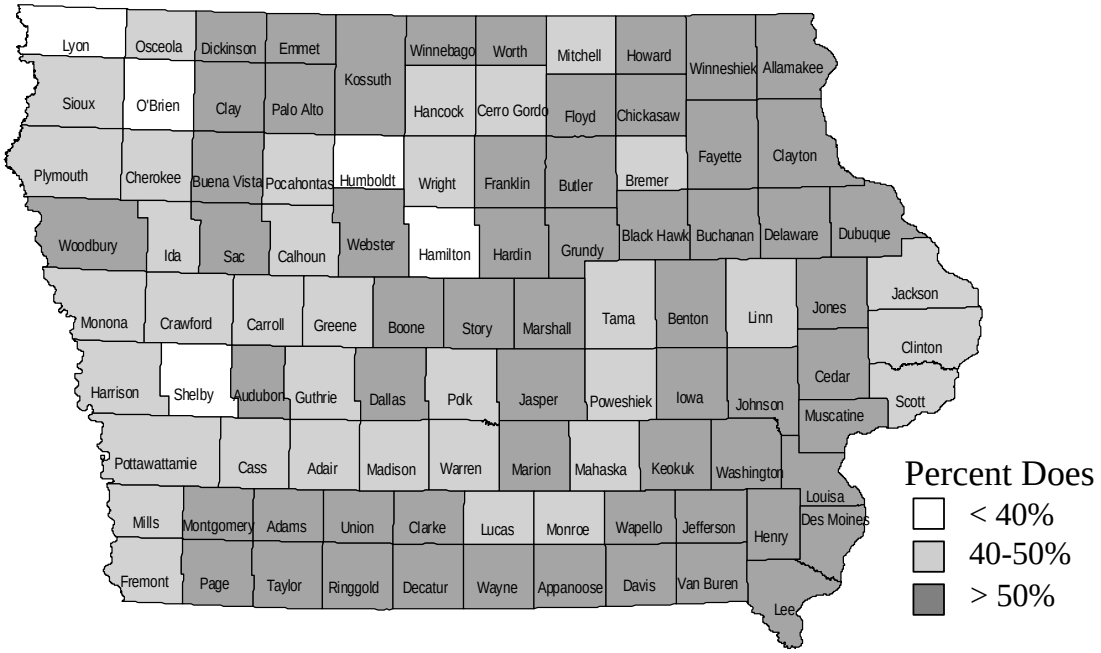


Fig 1.7 Deer population indices and correlation with simulation, 1985-present.

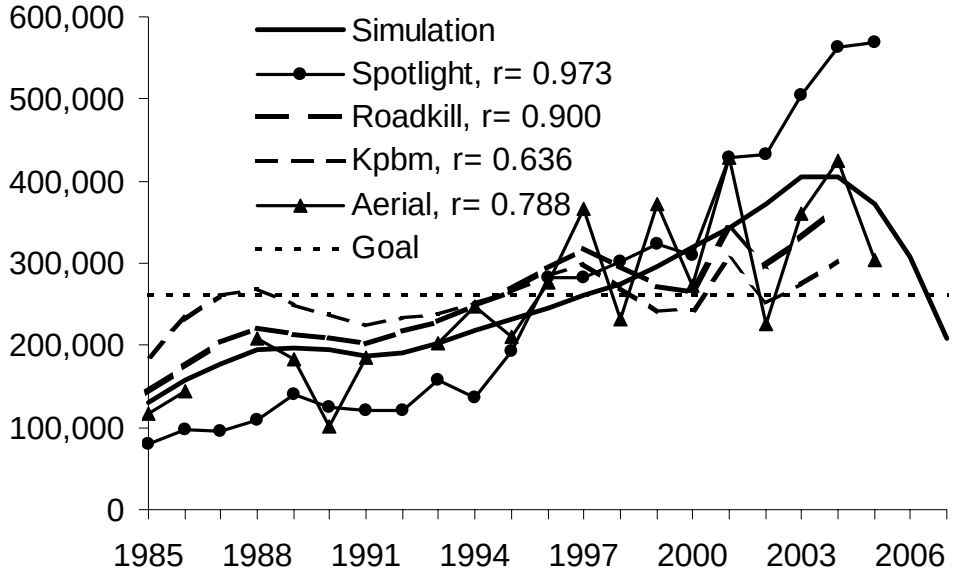


Fig 1.8 Deer population indices and correlation with simulation, 1986-present.

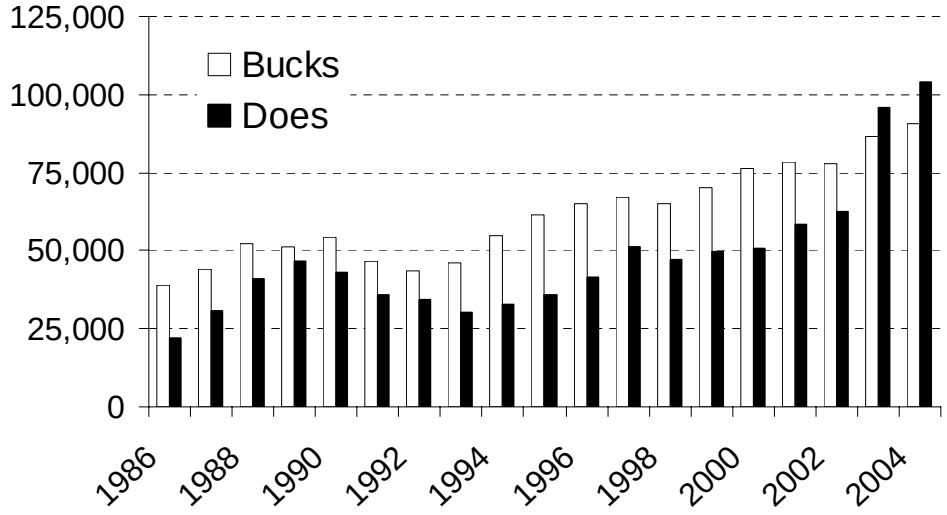
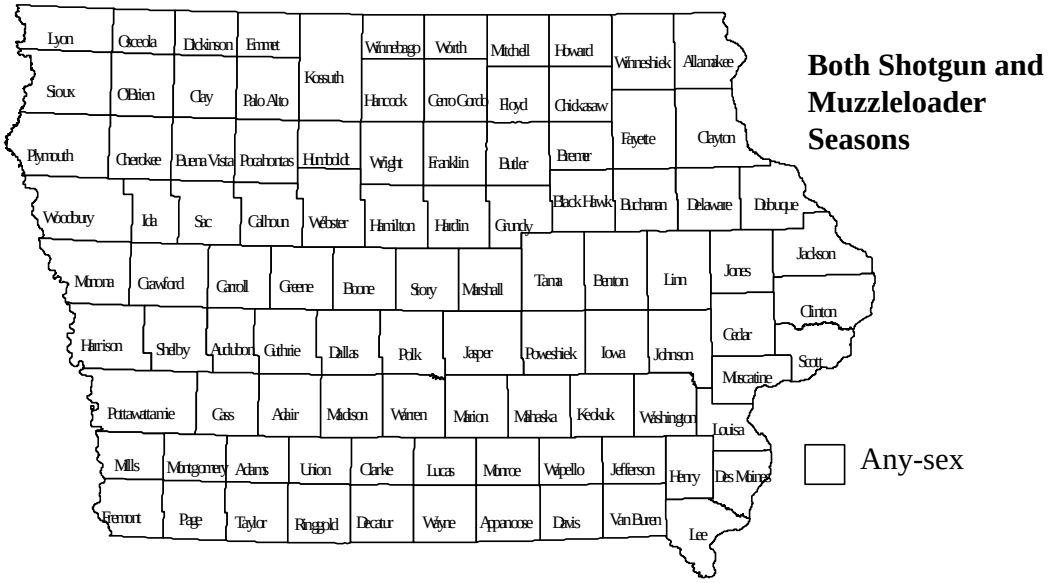
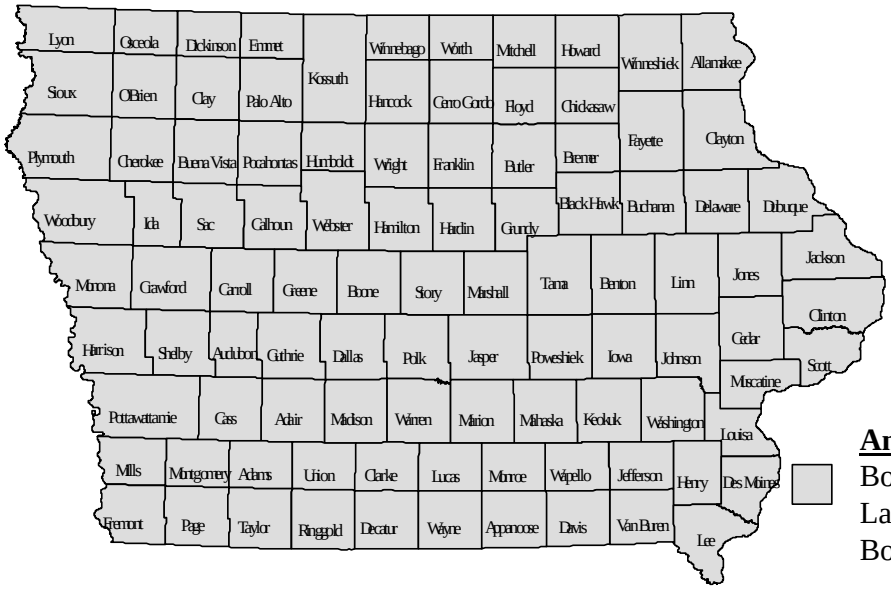


Fig 1.9 All counties were any-sex during all seasons in 2004-2005. All counties had antlerless licenses available and all counties were open for the bonus January season.



Both Shotgun and Muzzleloader Seasons

Any-sex



Antlerless Zone
Bow, Second Gun, Late Muzzleloader Bonus January also

Table 1.1 The dates, hours and zones for shotgun, archery and muzzleloader seasons (1985-present).
(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

		Shotgun		Archery		Muzzleloader	
Year	Zones	Dates	Hours	Dates	Hours	Dates	Hours
1985	1-10 e	Dec 7-11	Sunrise to	Oct 12-Dec 6	1/2 hr before	Dec 21-27	Sunrise to
1985	1-10	Dec 14-20	Sunset		sunrise to		Sunset
1986	1-10	Dec 6-10	"	Oct 11-Dec 5	1/2 hr after	Oct 11-17	1/2 hr before
1986	1-10	Dec 13-19	"		sunset	Dec 20-Jan 4	sunrise to
1987	1-10	Dec 5-9	"	Oct 1-Dec 4 &		Oct 10-18	1/2 hr after
1987	1-10	Dec 12-20	"	Dec 21-Jan 10	"	Dec 21-Jan 10	sunset
1988	1-10	Dec 3-7	"	Oct 1-Dec 2 &		Oct 15-23	"
1988	1-10	Dec 10-18	"	Dec 19-Jan 10		Dec 19-Jan 10	"
1989	1-10	Dec 2-6	"	Oct 1-Dec 1 &	"	Oct 14-Oct 22	"
1989	1-10	Dec 9-17	"	Dec 18-Jan 10		Dec 18-Jan 10	"
1990	1-10	Dec 1-5	"	Oct 1-Nov 30 &	"	Oct 13- Oct 21	"
1990	1-10	Dec 8-16	"	Dec 17-Jan 10		Dec 17-Jan 10	"
1991	1-10	Dec 7-11	"	Oct 1-Dec 6 &	"	Oct 12- Oct 20	"
1991	1-10	Dec 14-22	"	Dec 23-Jan 10		Dec 23-Jan 10	"
1992	1-10	Dec 5-9	"	Oct 1-Dec 4&	"	Oct 10-Oct 18	"
1992	1-10	Dec 12-20	"	Dec 21-Jan 10		Dec 21-Jan 10	"
1993	2	Dec 4-8	"	Oct 1-Dec 3&	"	Oct 9-Oct 17	"
1993	2	Dec 11-19	"	Dec 20-Jan 10		Dec 20-Jan 10	"
1994	Statewide	Dec 3-7	"	Oct 1-Dec 2&	"	Oct 15-Oct 23	"
1994	Statewide	Dec 10-18	"	Dec 19-Jan 10		Dec 19-Jan 10	"
1995	Statewide f	Dec 2-6	"	Oct 1-Dec 1&	"	Oct 14-Oct 22	"
1995	Statewide	Dec 9-17	"	Dec 18-Jan 10		Dec 18-Jan 10	"
1996	Statewide g	Dec 7-11	"	Oct 1-Dec 6&	"	Oct 12-Oct 20	"
1996	Statewide	Dec 14-22	"	Dec 23-Jan 10		Dec 23-Jan 10	"
1997	Statewide h	Dec 6-10	"	Oct 1-Dec 5&	"	Oct 11-Oct 18	"
1997	Statewide	Dec 13-21	"	Dec 22-Jan 10		Dec 22-Jan 10	"
1998	Statewide h	Dec 5-9	"	Oct 1-Dec 4&	"	Oct 17-Oct 25	"
1998	Statewide	Dec 12-20	"	Dec 21-Jan 10		Dec 21-Jan 10	"
1999	Statewide h	Dec 4-8	"	Oct 1-Dec 3&	"	Oct 16-Oct 24	"
1999	Statewide	Dec 11-19	"	Dec 20-Jan 10		Dec 20-Jan 10	"
2000	Statewide i	Dec 2-6	"	Oct 1-Dec 1&	"	Oct 14-Oct 22	"
2000	Statewide	Dec 9-17	"	Dec 18-Jan 10		Dec 18-Jan 10	"
2001	Statewide h	Dec 1-5	1/2 hr before	Oct 1-Nov 30 &	"	Oct 13- Oct 21	"
2001	Statewide	Dec 8-16	sunrise to	Dec 17-Jan 10		Dec 17-Jan 10	"
2002	Statewide h	Dec 7-11	1/2 hr after	Oct 1-Dec 6 &	"	Oct 12- Oct 20	"
2002	Statewide	Dec 14-22	sunset	Dec 23-Jan 10		Dec 23-Jan 10	"
2003	Statewide h	Dec 6-10	"	Oct 1-Dec 5 &	"	Oct 11- Oct 19	"
2003	Statewide	Dec 13-21	"	Dec 22-Jan 10		Dec 22-Jan 10	"
2004	Statewide h	Dec 4-8	"	Oct 1-Dec 3 &	"	Oct 16- Oct 24	"
2004	Statewide	Dec 11-19	"	Dec 20-Jan 10		Dec 20-Jan 10	"

e - Unlimited bucks-only statewide begining in 1973 in all following years

f - 34 counties were any-sex during 1st season and 74 were bucks only during first 7 days of the 2nd season

g - 35 counties were any-sex during 1st season and 26 were bucks only during the first 5 days of the 2nd season

h - all counties were any-sex during both seasons

i - 17 counties were buck-only during first 3 days of first season

Table 1.2 A summary of the number of licenses issued, the number of hunters, the number of deer harvested and success rates for the 2004-2005 season.

Season	License Type	Licenses Issued	Number of Hunters	Harvest	Success Rate
REGULAR GUN					
Paid	Season 1	71,455	70,812	49,283	70%
	Antlerless	13,074	12,813	8,691	68%
	Season 2	48,057	46,920	32,427	69%
	Antlerless	15,211	14,842	7,429	49%
	Nonresident	4,507	4,337	2,515	58%
	Total	152,304 (+ 8%)*a*	149,723 (+10%)	100,345 (+ 1%)	
Landowner	Any sex	45,406	38,785	22,561	58%
	Antlerless	8,276	5,494	3,772	69%
	Total	53,682 (+ 3%)	44,279 (+ 8%)	26,333 (+ 4%)	
GUN SEASON TOTAL		**205,986 (+ 7%)**	**194,002 (+10%)**	**126,678 (+ 2%)**	**65%**
MUZZLELOADER					
Early	Paid	7,510	7,185	4,340	60%
	Antlerless	2,378	2,272	1,249	55%
	Landowner	3,237	2,026	1,229	61%
	Total	13,125 (+10%)	11,483 (- 1%)	6,818 (+11%)	59%
Late	Paid	13,800	13,308	6,648	50%
	Antlerless	12,760	11,647	6,090	52%
	Landowner	2,677	1,695	812	48%
	Nonresident	851	697	350	50%
	Total	30,088 (+22%)	27,347 (+24%)	13,900 (+12%)	51%
MUZZLELOADER TOTAL		**43,213 (+18%)**	**38,830 (+16%)**	**20,718 (+12%)**	**53%**
JANUARY SEASON					
	Paid	14,182	12,509	7,455	60%
	Landowner	9,131	5,242	2,608	50%
	Total	**23,313 (+28%)**	**17,751 (+58%)**	**10,063 (+51%)**	**57%**
HOLIDAY ANTLERLESS		**349**	**329**	**102**	**31%**
YOUTH	Paid	3,978	3,948	2,066	52%
	Landowner	304	262	91	35%
	Disabled	90	82	40	49%
	Total	**4,372 (+12%)**	**4,292 (+15%)**	**2,197 (+16%)**	**51%**
ARCHERY	Paid	41,321	39,092	17,964	46%
	Antlerless	20,268	18,984	9,951	52%
	Landowner	5,804	4,538	2,110	46%
	Nonresident	2,745	2,588	1,020	39%
ARCHERY TOTAL		**70,138 (+11%)**	**65,202 (+17%)**	**31,045 (+13%)**	**48%**
TOTAL *b*		**353,172 (+10%)**	**326,207 (+13%)**	**194,512 (+ 6%)**	

a - the numbers in parentheses are the percent change from 2003-2004

b - total include licensed hunters and kill from hunts in special deer management zones and depredation licenses

Table 1.3 Historical data on deer license issue by license type (1985 - present). Totals include special IAAP licenses (1985-1990), 4074 special late season AS licenses for zone 6 (1985), nonresidents, special management unit hunts and special youth licenses.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

	Regular Gun			Muzzleloader				Grand
Year	Paid	Landowner	Total	Early	Late	Total	Archery	Total
1985	82,218	20,674	102,892		1,522	1,522	22,830	127,244
1986	84,858	25,432	110,290	2,246	1,973	4,219	26,521	141,030
1987	91,804	26,780	118,584	3,091	2,710	5,801	28,910	153,295
1988	101,338	28,002	129,340	3,565	3,618	7,183	30,020	166,543
1989	107,171	33,798	140,969	5,995	12,201	18,196	34,745	194,611
1990	106,781	27,106	133,887	6,602	15,949	22,551	35,217	192,551
1991	100,587	30,834	131,421	7,064	11,458	18,522	33,359	184,041
1992	100,461	30,084	130,545	8,280	10,978	19,315	34,165	186,436
1993	96,577	21,887	118,464	7,306	8,926	16,232	30,938	168,017
1994	102,773	22,809	125,582	8,113	9,737	17,850	34,222	180,525
1995	101,053	18,157	119,210	7,193	8,059	15,463	34,434	177,441
1996	106,746	28,080	134,826	8,806	11,820	20,626	36,351	202,834
1997	109,169	24,423	133,592	8,979	15,049	24,028	37,106	211,118
1998	114,358	25,960	140,318	9,504	12,721	22,225	39,506	223,419
1999	113,695	31,196	144,891	10,246	13,260	23,506	43,687	233,690
2000	113,728	32,116	145,844	10,279	15,242	25,521	44,658	229,800
2001	128,041	38,820	166,861	10,037	18,751	28,788	52,002	265,939
2002	118,973	42,989	161,962	9,807	19,479	29,286	51,534	265,185
2003	136,810	52,148	188,958	11,907	23,905	35,812	60,320	322,096
2004	147,797	53,682	201,479	13,125	29,237	42,362	67,393	353,172

Table 1.4 Historical data on deer harvest by license type (1985-present). Totals include IAAP harvest, special management unit hunts, nonresidents and youth.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

	Regular Gun			Muzzleloader				Grand
Year	Paid	Landowner	Total	Early	Late	Total	Archery	Total
1985	32,613	5,344	37,957		457	457	5,805	44,219
1986	41,352	10,378	51,730	349	728	1,077	9,895	62,702
1987	53,230	10,270	63,500	1,509	1,027	2,536	9,722	75,758
1988	66,757	13,298	80,055	1,835	1,294	3,129	9,897	93,756
1989	67,606	12,963	80,569	2,619	3,715	6,334	11,857	99,712
1990	69,101	9,095	78,196	2,819	5,884	8,703	10,146	98,002
1991	56,811	11,575	68,386	3,120	2,766	5,886	8,807	83,635
1992	50,822	10,453	61,275	3,316	3,231	6,564	8,814	77,684
1993	52,624	8,354	60,978	2,219	2,883	5,102	9,291	76,430
1994	59,054	8,735	67,789	2,610	3,196	5,806	12,040	87,231
1995	65,206	7,917	73,123	2,831	3,408	6,363	13,372	97,256
1996	71,577	10,896	82,473	2,895	4,558	7,453	12,314	107,632
1997	77,169	10,588	87,757	4,062	5,508	9,570	14,313	118,404
1998	73,165	9,989	83,154	4,448	5,343	9,791	12,302	112,608
1999	74,362	12,966	87,328	5,277	5,329	10,606	15,266	121,635
2000	77,743	13,189	90,932	4,585	5,936	10,521	17,727	126,535
2001	82,721	14,801	97,522	4,593	7,320	11,913	18,798	136,655
2002	77,940	18,932	96,872	5,091	7,772	12,863	20,703	140,490
2003	96,757	25,353	122,110	6,155	12,049	18,204	26,486	182,856
2004	97,830	26,333	124,163	6,818	13,550	20,368	30,025	194,512

Table 1.5 Harvest estimates and ranking for each season by county for total kill during the 2004-2005 deer season.

	Harvest							Rank						
	Paid	Muzzleloader				Non-		Paid	Muzzleloader				Non-	
County	Shotgun	Early	Late	Archery	Youth	resident	Total	Shotgun	Early	Late	Archery	Youth	resident	Total
Clayton	4,577	265	309	1,054	92	138	8,436	1	1	3	2	1	7	1
Van Buren	2,182	101	258	896	34	221	5,241	5	11	9	3	24	2	2
Allamakee	2,635	105	302	316	29	273	4,403	2	9	5	31	31	1	3
Linn	2,055	147	280	1,065	4	28	4,348	9	3	7	1	79	45	4
Dubuque	2,613	131	135	612	49	18	4,278	3	6	42	8	14	59	5
Jackson	2,331	88	153	478	49	72	3,989	4	15	28	14	15	15	6
Winneshiek	2,144	86	242	343	63	56	3,947	7	16	11	27	7	22	7
Johnson	2,077	173	339	628	88	49	3,912	8	2	2	7	2	25	8
Fayette	2,042	145	258	650	51	23	3,894	10	4	8	5	13	52	9
Davis	1,590	103	150	357	9	59	3,576	12	10	29	25	60	21	10
Jones	2,150	74	228	315	30	47	3,483	6	25	12	32	28	27	11
Washington	1,615	66	224	373	64	36	3,194	11	34	14	24	6	34	12
Iowa	1,426	52	200	456	85	31	2,980	18	44	15	17	4	42	13
Appanoose	1,268	79	394	273	59	160	2,979	24	20	1	41	9	5	14
Clinton	1,304	72	171	839	39	17	2,972	21	27	22	4	20	64	15
Delaware	1,133	137	300	522	85	50	2,971	34	5	6	12	3	23	16
Guthrie	1,497	76	183	284	28	78	2,732	15	22	19	38	33	14	17
Lee	1,539	130	136	193	42	26	2,669	13	7	40	58	17	47	18
Cedar	1,291	60	160	523	22	68	2,632	22	39	24	11	43	16	19
Madison	1,428	73	124	192	6	139	2,599	17	26	43	59	67	6	20
Marion	1,520	92	148	382	54	25	2,546	14	13	31	22	11	48	21
Monroe	1,217	30	303	430	30	161	2,543	29	65	4	18	27	4	22
Warren	1,280	78	155	477	53	45	2,540	23	21	27	15	12	29	23
Keokuk	1,125	75	146	406	58	36	2,511	35	23	35	21	10	35	24
Butler	1,159	53	159	475	5	38	2,489	33	42	26	16	74	33	25
Muscatine	1,350	85	189	340	15	18	2,477	20	17	17	28	50	60	26
Henry	1,485	56	165	355	16	35	2,451	16	41	23	26	49	38	27
Tama	1,252	68	251	332	11	22	2,420	27	30	10	29	53	54	28
Taylor	1,236	23	99	144	0	202	2,406	28	78	59	74	93	3	29
Louisa	1,413	39	141	234	35	23	2,383	19	51	37	48	23	53	30
Wapello	1,050	67	119	331	29	13	2,369	40	33	45	30	30	69	31
Benton	1,086	66	226	571	10	38	2,343	37	35	13	10	59	32	32
Ringgold	1,167	29	96	284	0	79	2,306	32	67	61	39	86	13	33
Des Moines	1,253	50	107	242	6	33	2,204	26	46	51	43	63	39	34
Jasper	907	115	136	220	39	17	2,158	49	8	41	52	21	65	35
Pottawattamie	1,260	97	195	314	0	21	2,131	25	12	16	33	83	56	36
Lucas	1,191	31	100	212	20	98	2,126	30	63	57	54	44	9	37
Clarke	952	36	85	298	11	18	2,109	45	56	64	36	54	61	38
Jefferson	1,102	8	141	260	11	47	2,085	36	94	38	42	55	28	39
Hardin	1,056	68	147	279	17	32	2,033	39	31	34	40	47	41	40
Dallas	1,016	66	179	415	35	12	1,989	41	36	20	20	22	71	41
Woodbury	977	29	160	591	0	25	1,966	44	68	25	9	82	49	42
Decatur	944	27	79	121	0	82	1,944	46	71	67	78	94	12	43
Mahaska	1,182	15	73	239	0	33	1,917	31	88	70	44	87	40	44
Wayne	674	18	143	185	1	111	1,871	65	85	36	62	81	8	45
Chickasaw	872	75	101	187	20	10	1,796	51	24	55	61	45	76	46
Adair	924	32	101	226	6	27	1,772	47	60	56	51	65	46	47
Bremer	753	64	70	512	61	28	1,763	56	37	72	13	8	43	48
Union	885	20	138	87	30	48	1,755	50	82	39	82	29	26	49
Poweshiek	1,076	72	38	83	47	24	1,754	38	28	85	84	16	50	50

Table 1.5 *(cont.)* Harvest estimates and ranking for each season by county for total kill during the 2004-2005 deer season.

	Harvest							Rank						
	Paid	Muzzleloader				Non-		Paid	Muzzleloader				Non-	
County	Shotgun	Early	Late	Archery	Youth	resident	Total	Shotgun	Early	Late	Archery	Youth	resident	Total
Monona	1,004	48	120	311	0	96	1,751	42	48	44	34	84	10	51
Howard	679	82	86	233	26	35	1,745	64	18	63	49	34	36	52
Marshall	924	31	100	168	23	24	1,697	48	64	58	69	41	51	53
Page	810	43	113	205	0	67	1,676	54	50	46	56	90	18	54
Boone	604	68	148	188	40	62	1,663	69	32	32	60	18	20	55
Scott	655	24	41	636	6	3	1,649	66	75	83	6	61	92	56
Floyd	790	61	112	237	29	10	1,635	55	38	47	46	32	75	57
Harrison	990	30	149	182	26	66	1,629	43	66	30	65	35	19	58
Buchanan	702	59	107	420	16	3	1,615	58	40	50	19	48	90	59
Mitchell	840	49	43	154	31	42	1,497	53	47	82	70	26	30	60
Black Hawk	580	82	75	307	81	4	1,497	71	19	69	35	5	84	61
Adams	622	29	174	238	5	88	1,479	68	69	21	45	75	11	62
Webster	741	91	76	210	6	18	1,475	57	14	68	55	66	63	63
Montgomery	691	10	185	229	0	50	1,446	61	92	18	50	88	24	64
Cherokee	869	32	32	183	11	18	1,414	52	61	89	64	56	62	65
Mills	648	46	90	296	0	20	1,360	67	49	62	37	85	58	66
Fremont	684	24	112	179	23	35	1,318	63	74	49	66	40	37	67
Polk	594	23	71	380	6	9	1,277	70	79	71	23	62	78	68
Cass	692	15	80	116	12	68	1,255	60	89	65	80	51	17	69
Greene	570	72	60	236	6	3	1,220	73	29	74	47	64	93	70
Franklin	701	25	112	52	0	42	1,109	59	73	48	88	97	31	71
Crawford	690	14	66	149	0	13	1,054	62	90	73	73	92	70	72
Worth	438	32	148	153	5	28	991	76	62	33	71	77	44	73
Wright	392	52	54	205	0	22	953	83	45	77	57	91	55	74
Buena Vista	401	20	45	185	24	7	935	81	83	81	63	38	81	75
Story	577	26	46	171	5	4	901	72	72	80	67	76	87	76
Cerro Gordo	367	38	102	130	5	4	887	89	52	54	76	78	88	77
Kossuth	535	13	97	152	25	11	859	74	91	60	72	37	73	78
Plymouth	396	37	107	134	6	3	856	82	54	52	75	68	94	79
Lyon	369	34	20	45	26	11	824	88	59	94	92	36	72	80
Hamilton	386	21	16	115	6	20	799	84	81	97	81	70	57	81
Audubon	330	16	59	86	0	7	791	90	87	75	83	95	82	82
Sac	410	28	36	125	34	7	787	78	70	86	77	25	80	83
Hancock	410	53	55	17	18	0	750	79	43	76	97	46	96	84
Humboldt	374	18	24	213	0	3	735	87	86	92	53	89	95	85
Palo Alto	377	37	79	120	6	0	710	86	55	66	79	69	97	86
Clay	378	36	104	39	11	10	702	85	58	53	93	57	77	87
Carroll	324	19	35	171	40	7	690	92	84	87	68	19	79	88
O'Brien	445	24	20	59	12	6	680	75	76	95	87	52	83	89
Shelby	428	21	39	49	24	4	590	77	80	84	91	39	85	90
Sioux	406	36	27	52	6	14	586	80	57	91	89	72	68	91
Emmet	329	9	33	24	23	14	525	91	93	88	94	42	67	92
Winnebago	259	24	49	74	0	11	440	94	77	78	85	96	74	93
Dickinson	227	38	47	49	0	0	414	95	53	79	90	98	99	94
Grundy	292	3	12	14	3	0	408	93	96	98	98	80	98	95
Calhoun	189	3	12	69	6	17	369	97	97	99	86	71	66	96
Ida	216	1	23	18	0	4	347	96	99	93	96	99	89	97
Pocahontas	146	3	19	19	11	3	231	98	98	96	95	58	91	98
Osceola	88	4	30	6	6	4	190	99	95	90	99	73	86	99
Total	97,830	5,351	12,226	27,404	2,197	3,987	194,512							

Table 1.6 Harvest estimates by county for total kill during the 2004-2005 deer season.

County	Hunters	Antlered Bucks	Does	Button Bucks	Total	Percent of kill: Does	Antlered Bucks	Hunters/ Sq. Mile	Kill/ Sq. Mile
Adair	2,701	779	811	182	1,772	46%	44%	4.75	3.11
Adams	1,894	600	775	104	1,479	52%	41%	4.45	3.47
Allamakee	6,957	1,775	2,314	314	4,403	53%	40%	10.94	6.92
Appanoose	4,276	1,027	1,672	280	2,979	56%	34%	8.18	5.70
Audubon	1,328	355	404	32	791	51%	45%	2.96	1.77
Benton	3,503	798	1,288	257	2,343	55%	34%	4.88	3.26
Black Hawk	2,622	536	778	183	1,497	52%	36%	4.62	2.64
Boone	3,074	483	994	186	1,663	60%	29%	5.36	2.90
Bremer	3,076	790	829	144	1,763	47%	45%	7.01	4.02
Buchanan	2,600	593	905	117	1,615	56%	37%	4.58	2.84
Buena Vista	1,413	286	583	66	935	62%	31%	2.47	1.63
Butler	3,924	1,001	1,272	216	2,489	51%	40%	6.74	4.28
Calhoun	582	163	156	50	369	42%	44%	1.02	0.65
Carroll	1,102	295	342	53	690	50%	43%	1.92	1.20
Cass	1,941	519	563	173	1,255	45%	41%	3.47	2.25
Cedar	3,967	998	1,458	176	2,632	55%	38%	6.78	4.50
Cerro Gordo	1,927	368	389	130	887	44%	41%	3.35	1.54
Cherokee	2,069	675	704	35	1,414	50%	48%	3.61	2.47
Chickasaw	2,992	565	1,068	163	1,796	59%	31%	5.92	3.56
Clarke	3,138	726	1,166	217	2,109	55%	34%	7.31	4.92
Clay	1,474	252	420	30	702	60%	36%	2.59	1.23
Clayton	11,504	2,770	4,658	1,008	8,436	55%	33%	14.77	10.83
Clinton	5,020	1,216	1,410	346	2,972	47%	41%	7.24	4.29
Crawford	1,740	510	448	96	1,054	43%	48%	2.43	1.47
Dallas	3,469	757	1,029	203	1,989	52%	38%	5.81	3.33
Davis	5,007	1,160	1,989	427	3,576	56%	32%	9.84	7.03
Decatur	3,039	559	1,116	269	1,944	57%	29%	5.73	3.67
Delaware	4,261	1,062	1,646	263	2,971	55%	36%	7.45	5.19
Des Moines	3,695	785	1,140	279	2,204	52%	36%	9.06	5.40
Dickinson	807	159	235	20	414	57%	38%	2.12	1.09
Dubuque	6,664	1,360	2,416	502	4,278	56%	32%	10.89	6.99
Emmet	1,179	196	310	19	525	59%	37%	2.99	1.33
Fayette	6,122	1,225	2,357	312	3,894	61%	31%	8.41	5.35
Floyd	2,497	508	876	251	1,635	54%	31%	4.96	3.25
Franklin	1,714	369	596	144	1,109	54%	33%	2.92	1.89
Fremont	1,893	655	567	96	1,318	43%	50%	3.61	2.52
Greene	2,022	476	560	184	1,220	46%	39%	3.55	2.14
Grundy	645	184	221	3	408	54%	45%	1.29	0.81
Guthrie	4,095	1,109	1,307	316	2,732	48%	41%	6.87	4.58
Hamilton	1,525	485	274	40	799	34%	61%	2.64	1.38
Hancock	1,446	210	345	195	750	46%	28%	2.54	1.32
Hardin	3,051	849	1,053	131	2,033	52%	42%	5.32	3.54
Harrison	2,727	653	792	184	1,629	49%	40%	3.92	2.34
Henry	3,644	682	1,433	336	2,451	58%	28%	8.28	5.57
Howard	2,799	549	976	220	1,745	56%	31%	5.94	3.70
Humboldt	1,173	404	283	48	735	39%	55%	2.70	1.69
Ida	749	147	165	35	347	48%	42%	1.74	0.81
Iowa	4,698	1,004	1,595	381	2,980	54%	34%	8.04	5.10
Jackson	5,453	1,567	1,966	456	3,989	49%	39%	8.47	6.19

Table 1.6 (*cont.*) Harvest estimates by county for total kill during the 2004-2005 deer season.

County	Hunters	Antlered Bucks	Does	Button Bucks	Total	Percent of kill: Does	Antlered Bucks	Hunters/ Sq. Mile	Kill/ Sq. Mile
Jasper	3,430	724	1,276	158	2,158	59%	34%	4.67	2.94
Jefferson	2,786	671	1,199	215	2,085	58%	32%	6.39	4.78
Johnson	6,759	1,083	2,361	468	3,912	60%	28%	10.92	6.32
Jones	5,025	917	2,026	540	3,483	58%	26%	8.59	5.95
Keokuk	3,785	845	1,366	300	2,511	54%	34%	6.54	4.34
Kossuth	1,812	327	465	67	859	54%	38%	1.85	0.88
Lee	4,364	904	1,344	421	2,669	50%	34%	8.28	5.06
Linn	6,347	1,638	2,086	624	4,348	48%	38%	8.85	6.06
Louisa	3,426	612	1,464	307	2,383	61%	26%	8.50	5.91
Lucas	3,344	889	944	293	2,126	44%	42%	7.71	4.90
Lyon	1,589	457	309	58	824	38%	55%	2.70	1.40
Madison	4,429	996	1,230	373	2,599	47%	38%	7.85	4.61
Mahaska	2,888	791	912	214	1,917	48%	41%	5.05	3.35
Marion	4,224	834	1,292	420	2,546	51%	33%	7.45	4.49
Marshall	2,454	576	882	239	1,697	52%	34%	4.28	2.96
Mills	1,940	581	638	141	1,360	47%	43%	4.34	3.04
Mitchell	2,223	702	614	181	1,497	41%	47%	4.76	3.21
Monona	2,715	841	850	60	1,751	49%	48%	3.88	2.51
Monroe	3,513	1,051	1,232	260	2,543	48%	41%	8.08	5.85
Montgomery	1,990	537	766	143	1,446	53%	37%	4.72	3.43
Muscatine	4,191	735	1,465	277	2,477	59%	30%	9.46	5.59
O'Brien	1,236	378	250	52	680	37%	56%	2.15	1.18
Osceola	795	78	90	22	190	47%	41%	2.00	0.48
Page	2,528	626	877	173	1,676	52%	37%	4.73	3.13
Palo Alto	1,142	291	373	46	710	53%	41%	2.04	1.27
Plymouth	1,894	311	408	137	856	48%	36%	2.19	0.99
Pocahontas	557	115	102	14	231	44%	50%	0.96	0.40
Polk	2,928	588	565	124	1,277	44%	46%	4.93	2.15
Pottawattamie	3,529	953	1,036	142	2,131	49%	45%	3.66	2.21
Poweshiek	3,034	833	838	83	1,754	48%	47%	5.15	2.98
Ringgold	3,033	746	1,397	163	2,306	61%	32%	5.64	4.29
Sac	1,280	325	406	56	787	52%	41%	2.21	1.36
Scott	3,326	680	785	184	1,649	48%	41%	7.33	3.63
Shelby	1,178	354	185	51	590	31%	60%	2.01	1.01
Sioux	1,445	297	270	19	586	46%	51%	1.89	0.77
Story	1,981	372	464	65	901	51%	41%	3.49	1.59
Tama	3,877	1,039	1,203	178	2,420	50%	43%	5.38	3.36
Taylor	3,010	792	1,359	255	2,406	56%	33%	5.70	4.56
Union	2,398	657	931	167	1,755	53%	37%	5.64	4.13
Van Buren	6,839	1,413	3,162	666	5,241	60%	27%	14.04	10.76
Wapello	3,554	768	1,294	307	2,369	55%	32%	8.13	5.42
Warren	4,877	1,211	1,017	312	2,540	40%	48%	8.53	4.44
Washington	4,512	817	1,927	450	3,194	60%	26%	7.94	5.62
Wayne	3,174	517	1,127	227	1,871	60%	28%	5.97	3.52
Webster	2,631	622	771	82	1,475	52%	42%	3.66	2.05
Winnebago	1,004	189	226	25	440	51%	43%	2.50	1.10
Winneshiek	5,426	1,257	2,158	532	3,947	55%	32%	7.89	5.74
Woodbury	3,396	606	1,163	197	1,966	59%	31%	3.90	2.26
Worth	1,502	366	513	112	991	52%	37%	3.76	2.48
Wright	1,795	494	396	63	953	42%	52%	3.11	1.65
Total	306,114	69,600	103,785	21,127	194,512	53%	36%	5.46	3.47

Table 1.7 A summary of archery season dates, hours, success rates and other information (1985 - present).
(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
1985	Oct 12-Dec 6	sunrise to	68	26	15	$ 20 fee.
1986	Oct 11-Dec 5	1/2 hr	72	38	17	Limit 1/Bow and 1/Gun
1987	Oct 1-Dec 4 &	after sunset	68	35		Added late season.
	Dec 21-Jan 10	"				
1988	Oct 1-Dec 2 &	"	71	35	16	
	Dec 19-Jan 10	"				
1989	Oct 1-Dec 1 &	"	73	36	20	Bonus 2nd tag for antlerless deer
	Dec 18-Jan 10	"				statewide
1990	Oct 1-Nov 30 &	"	65	32	19	Bonus tag for antlerless early or
	Dec 17-Jan 10	"				anysex late,statewide
1991	Oct 1-Dec 6 &	"	73	28	17	Bonus tag for antlerless deer available
	Dec 23-Jan 10	"				only in zones 3a,4a,5a and 6. $25 fee.
1992	Oct 1-Dec 4 &	"	69	28	15	Bonus tag for antlerless deer available
	Dec 21 -Jan 10	"				only in bonus antlerless zone if no gun tag.
1993	Oct 1-Dec 3 &	"	73	32	17	Bonus tag for antlerless deer available
	Dec 20-Jan 10	"				only in bonus antlerless zone if no gun tag.
1994	Oct 1-Dec 2&	"	77	37	16	Bonus tag for antlerless deer available
	Dec 19-Jan 10	"				only in bonus antlerless zone if no gun tag.
1995	Oct 1-Dec 1&	"	76	39	17	Bonus tag for antlerless deer available
	Dec 18-Jan 10	"				only in bonus antlerless zone if no gun tag.
1996	Oct 1-Dec 6&	"	78	37	16	Bonus tag for antlerless deer available
	Dec 23-Jan 10	"				only in bonus antlerless zone if no gun tag.
1997	Oct 1-Dec 5&	"	71	42	17	Bonus tag for antlerless deer available only in
	Dec 22-Jan 10	"				bonus antlerless zone. Could get firearm license also.
1998	Oct 1-Dec 4&	"	76	34	15	Bonus tag for antlerless deer available only in
	Dec 21-Jan 10	"				bonus antlerless zone. Could get firearm license also.
1999	Oct 1-Dec 3&	"	79	37	16	Bonus tag for antlerless deer available only in
	Dec 20-Jan 10	"				bonus antlerless zone. Could get firearm license also.
2000	Oct 1-Dec 1&	"	80	44	17	Bonus tag for antlerless deer available only in
	Dec 18-Jan 10	"				bonus antlerless zone. Could get firearm license also.
2001	Oct 1-Nov 30&	"	75	37	17	Bonus tag for antlerless deer available in every county.
	Dec 17-Jan 10	"				Could get firearm license also.
2002	Oct 1-Dec 6 &	"	66	39	17	Bonus tag for antlerless deer available in every county.
	Dec 23-Jan 10	"				Could get firearm license also.
2003	Oct 1-Dec 5 &	"	54	44	18	Bonus tag for antlerless deer available in every county.
	Dec 22-Jan 10	"				Could get firearm license also.
2004	Oct 1-Dec 3 &	"	54	46	18	Bonus tag for antlerless deer available in every county.
	Dec 20-Jan 10	"				Could get firearm license also.

Table 1.8 A summary of muzzleloader season dates, hours, success rates and other information (1985 - present).

Year	Dates	Hours	Percent Bucks in Harvest	Success Rate	Mean Days/Hunter	General Comments
1985	Dec 21-27	Sunrise to Sunset	44	34	4	2000 A-S Quota. $20 fee.
1986	Oct 11-17	1/2 hr	100	17	4	2500 B-O Quota.
	Dec 20-Jan 4	before	43	40	6	Unlimited A-S Quota.
1987	Oct 10-18	sunrise	55	52	8	3000 A-S Quota
	Dec 21-Jan 10	to	46	42	6	Unlimited A-S Quota.
1988	Oct 15-23	1/2 hr after	55	55	4	3500 A-S Quota
	Dec 19-Jan 10	sunset	41	39	6	Unlimited A-S Quota.
1989	Oct 14-22	"	55	49	5	5000 A-S Quota
	Dec 18-Jan 10	"	28	39	9	Unlimited A-S Quota. Could hunt during shotgun also.
1990	Oct 13-21	"	53	46	5	5000 A-S Quota
	Dec 17 -Jan 10	"	50	45	8	Could hunt shotgun & late muzzleloader season.
1991	Oct 12-20	"	54	47	5	5000 A-S Quota
	Dec 23 -Jan 10	"	40	33	8	Could hunt shotgun & late muzzleloader season, but all 2nd tags valid for antlerless only in zones 3a,4a,5a&6.
1992	Oct 10-18	"	60	45	4	7500 Anysex license quota.
	Dec 21-Jan 10	"	40	36	8	All second licenses antlerless, Zones 4a,5a&6.
1993	Oct 9-17	"	71	34	5	7500 license quota, 65 counties buck-only.
	Dec 20-Jan 10	"	46	39	8	Antlerless in 14 counties, 35 counties buck-only.
1994	Oct 15-23	"	78	36	5	7500 license quota, 67 counties buck-only.
	Dec 19-Jan 10	"	52	39	8	Antlerless in 14 counties, 35 counties buck-only.
1995	Oct 14-22	"	73	43	5	7500 license quota, 69 counties buck-only.
	Dec 18-Jan 10	"	55	46	8	No antlerless tags, 29 counties modified buck-only.
1996	Oct 12-20	"	75	39	5	7500 license quota, 64 counties buck-only.
	Dec 23-Jan 10	"	49	46	7	Antlerless in 15 1/2 counties, 26 modified buck-only.
1997	Oct 11-19	"	55	62	4	7500 license quota, no counties buck only
	Dec 22-Jan 10	"	44	52	7	Antlerless in 19 1/2 counties, no counties buck-only.
1998	Oct 17-25	"	64	52	5	7500 license quota, no counties buck only
	Dec 21-Jan 10	"	54	50	7	Antlerless in 20 counties, no counties buck-only.
1999	Oct 16-24	"	60	57	4	7500 license quota, no counties buck only
	Dec 20-Jan 10	"	52	46	7	Antlerless in 21 counties, no counties buck-only.
2000	Oct 14-22	"	60	53	4	7500 license quota, 16 counties modified buck only
	Dec 18-Jan 10	"	50	47	7	Antlerless in 21 counties, no counties buck-only.
2001	Oct 13-21	"	54	53	4	7500 license quota, no counties buck only
	Dec 17-Jan 10	"	52	44	8	Antlerless in all counties, no counties buck-only.
2002	Oct 12- Oct 20	"	65	56	4	7500 license quota, no counties buck only
	Dec 23-Jan 10	"	41	46	6	Antlerless in all counties, no counties buck-only.
2003	Oct 11- Oct 19	"	54	55	4	7500 license quota, no counties buck only
	Dec 22-Jan 10	"	37	51	6	Antlerless in all counties, no counties buck-only.
2004	Oct 16- Oct 24	"	55	58	5	7500 license quota, no counties buck only
	Dec 20-Jan 10	"	37	48	6	Antlerless in all counties, no counties buck-only.

Table 1.9 The results of the deer population surveys (1976 - present).

	Spotlight Survey		Aerial Survey			Traffic Kill Per Billion Vehicle Mi.	
Year	Mean Count	Percent Change	Weighted Count *a*	Percent Change	Traffic Kill	Number	Percent Change
1976	-	-	-	-	2,537	225	-1%
1977	-	-	-	-	2,929	252	12%
1978	6.9	-	-	-	2,872	241	-4%
1979	6.8	-1%	-	-	3,005	259	7%
1980	7.1	4%	-	-	3,743	335	29%
1981	5.9	-17%	-	-	4,164	365	9%
1982	12.0	103%	-	-	4,805	412	13%
1983	13.3	11%	5,903	-	5,335	448	9%
1984	16.4	23%	6,387	8%	6,177	500	12%
1985	15.4	-6%	7,607	19%	5,925	495	-1%
1986	18.5	20%	9,790	29%	7,225	593	20%
1987	18.2	-2%	-	-	8,440	678	14%
1988	20.8	14%	10,289	5% *b*	9,248	707	4%
1989	26.8	29%	9,672	-6%	8,914	655	-7%
1990	24.0	-10%	7,070	-27%	8,799	607	-7%
1991	23.0	-4%	9,191	30%	8,428	590	-3%
1992	23.0	0%	8,235	-10%	9,135	616	4%
1993	30.0	30%	8,680	5%	9,576	624	1%
1994	25.8	-14%	10,483	21%	10,438	663	6%
1995	35.3	37%	10,877	4%	11,167	699	5%
1996	51.1	45%	12,051	11%	12,276	748	7%
1997	51.1	0%	13,902	15%	13,148	778	4%
1998	55.9	9%	12,651	-9%	12,427	714	-8%
1999	59.9	7%	14,928	18%	11,366	637	-11%
2000	57.2	-5%	15,375	3%	11,114	642	1%
2001	81.4	42%	15,793	3%	14,243	799	24%
2002	80.0	-2%	13,107	-17%	12,377	662	-17%
2003	92.5	16%	15,676	20%	13,720	726	10%
2004	101.1	9%	18,028	15%	15,361	803	11%
2005	104.9	4%	15,324	-15%			

a - adjusted for missing counts

b - change form 1986 to 1988

Table 1.10 Results from controlled hunts in the special deer management zones for 2004-2005.

Area	Weapon	Licenses	Hunters	Harvest
Lake Panorama	Archery	200	137	51
Ledges State Park	Shotgun	50	50	42
Lake of Three Fires	Shotgun	45	30	25
Kent Park	Shotgun	100	77	37
Coralville, City of	Archery	400	162	107
Johnson County Zone	Archery & Firearm	500	244	175
Black Hawk County Zone	Archery	306	163	76
Smith Wildlife Area	Shotgun	8	5	4
Lake Manawa State Park	Archery	37	26	13
Viking Lake State Park	Shotgun	45	45	34
Elk Rock State Park	Shotgun	50	28	22
Scott County Park	Shotgun	75	75	53
Linn County Zone	Archery & Firearm	500	269	165
Squaw Creek Park	Archery	150	86	35
Marion, City of	Archery	125	51	56
Backbone State Park	Shotgun	120	119	80
Polk County Zone	Archery & Firearm	500	491	297
Dubuque County Zone	Archery & Firearm	400	227	139
Iowa Army Ammunition Plant	Archery & Firearm	1000	634	336
Iowa Army Ammunition Plant (Perimeter Zone)	Archery & Firearm	400	106	62
Springbrook State Park	Firearm	20	19	11
Lake Darling State Park	Firearm	200	112	80
Pine Lake State Park	Firearm	50	48	20
Green Valley State Park	Firearm	50	48	40
Lake Keomah State Park	Archery	50	20	13
DeSoto National Refuge	Archery & Firearm	70	45	30
Depredation & Shooting Permits	Archery & Firearm	3,248	2,484	1,706
Total		8,699	5,801	3,709

WILD TURKEYS

Historical Perspective

History: Iowa's primitive oak-hickory forests covered nearly 7 million acres (2.8 million ha) during the original land survey in 1859 (Thornton and Morgan 1959). Settlers' records indicate turkeys were associated with most of this timber. Although turkeys may not have been as numerous in Iowa as in their primary range east of the Mississippi River, they were still plentiful (Peterson 1943). Unfortunately, wild turkeys were eliminated from Iowa by the early 1900's due to habitat loss and partly because of uncontrolled subsistence hunting (Little 1980).

Habitat: Only 2.6 million acres (1.1 million ha) of forest remained when the second land survey was completed in 1956, a reduction of 63% in a century, and perhaps 50% of the remaining forest was badly mismanaged through overgrazing (Thornton and Morgan 1959). In 1974, Iowa had 1.6 million acres of forestland, which made up 4.3% of the State's land area. Iowa's remnant forests now total 2.1 million acres (850,202 ha), just 5.7% of the State and only 30% of pre-settlement forests (Leatherberry et al. 1990).

Forest types throughout Iowa are second or third growth oak-hickory on uplands and elm-ash-cottonwood on floodplains (Ostrom 1976). Oak types constitute 55% of all forest stands, with red oak - white oak - hickory (35% of all forests) dominant in all regions. Maple-basswood stands (10%) are found on mesic sites and are climax in the northeast and central regions, but are replaced by white oak (10%) and short, scrubby burr oak (10%) in the southern and arid western regions, respectively. Aspen and other northern hardwoods (1%) are found occasionally in the Northeast. Statewide, 65% of all commercial stands are entering saw timber and 20% are in pole timber (Leatherberry et al. 1990). Ninety-two percent of Iowa's forest land is privately owned, with nearly half of the remaining 8% in state ownership, 38% owned by other public agencies and 14% in park-refuges withdrawn from active management (Ostrom 1976, Leatherberry et al. 1990). Iowa has no national forests, parks or wildlife refuges devoted to forest land management.

Restoration: The Iowa Department of Natural Resources (IDNR) began experimenting with turkey restoration in 1920 using pen-reared birds. Releases were made over the next 18 years but all releases were uniform failures.

The first attempts at releasing transplanted wild turkeys were in the early 1960's. Rio Grande and Merriam's subspecies were released at several sites during the 1960's but ultimately their poor adaptation to Iowa's oak-hickory forest led to population failures for both subspecies.

The first release of eastern wild turkeys was in 1966 in Lee County. The population response of these turkeys was phenomenal – survival of released birds, reproduction, and poult survival were all excellent. The success of this eastern subspecies stocking led to an additional stocking that also proved successful. By 1971 it was obvious that the Eastern subspecies was the turkey to use in future restoration attempts.

Since the initial 1965 release, 3,578 Eastern wild turkeys have been trapped and released at 259 sites at a stocking rate of approximately 3 adult gobblers and 10 hens per site. Nearly all sites are considered successful, however the most recent stockings are still being evaluated. No sites are currently considered to be unsuccessful. Most sites were opened to hunting after populations were established, usually about 5 years post-stocking. Restorations by the IDNR during the last 2 decades have returned wild turkeys to about 95% of the

remnant timber stands in the state. Restoration efforts ended in 2001 with the last release site occurring in Linn county.

Spring Harvest Survey

History: Spring bearded-turkey-only hunting seasons began in 1974. The objective of Iowa's spring season has been to maximize hunting opportunity while maintaining a quality hunting experience. Quality hunting is defined as the chance to hunt turkeys reasonably free of interference from other hunters. The primary method used to reduce interference is to control hunter densities through license quotas established for multiple zones and seasons.

Annual licenses issued, hunters, and harvest increased gradually from 1974-87 (Fig. 2.1). During 1988-99, there were dramatic increases in license issue and hunter numbers due to an unlimited license quota in the fourth season. The area open to spring turkey hunting in Iowa also increased dramatically from 2 small southern zones and 1 larger northeast zone in 1974 to the entire state during the 1999 spring season (Fig. 2.2, a and b). Hunter numbers and timber acres with huntable turkey populations have increased proportionally, allowing hunter densities to remain at < 4 hunters/mi^2 of timber per season.

2005: Iowa's 31th modern spring hunting season recorded the second largest number of turkeys harvested, with license sales the second most also (Table 2.1 and 2.3). This was the seventeenth year the entire state was open to spring turkey hunting (Table 2.11). The 35-day season (11 April through 15 May, 2005) was partitioned into 4 separate seasons: 4, 5, 7, and 19-days in length, respectively. The 4-season format, with unlimited license quota an unlimited license quota for all the periods, resulted in 52,783 resident shotgun licenses issued. An additional record number (3,952) of archery-only licenses were issued. Archery-only harvest surveys have ceased because of poor survey response compliance by archery-only hunters. However, archery-only harvest and success rates varied little during the years with survey information.

Forty-eight percent of the hunters were successful in harvesting a gobbler in 2005 (Table 2.4). Spring harvest success rates fluctuated around 20-30% during the first 12 years (unweighted average = 25.1 for 1974-85) but success increased each year during 1985-88 (Fig. 2.4). Declines observed in spring hunter success rates during 1983 and 1984 (Fig. 2.4) can be partially explained by poor brood production during the summers of 1982 (Fig. 2.10). Similarly, the decline in hunter success rates between 1988 and 1993 may be explained by 6 years of poor brood production starting in 1988. The success rates over the last five years averaged 46.0%.

This was the sixteenth spring that non-residents were allowed to hunt turkeys in Iowa. Quotas in zones 4 (all seasons), and zone 5 (season 4) were filled in 2005. Ninety-nine percent of the non-resident hunters that were issued a license actually hunted and they harvested an estimated 1,187 wild turkeys (Tables 2.2 and 2.3). Non-residents were more successful than residents in harvesting a spring gobbler (56.0% versus 47.5%, respectively) (Table 2.4).

Fall Harvest Survey

History: Fall, any-sex turkey hunting was initiated in Iowa in 1981 to provide additional hunting recreation from the wild turkey resource. Because any-sex hunts are more controversial than male-only hunts and potential exists for over-harvesting hens, carefully controlled fall hunts began in 1981 on an experimental basis. These hunts occurred in portions of southern Iowa,

which had established, stable turkey populations. Fall turkey hunting has changed dramatically since the initial experimental 1981 season. The area encompassed by fall hunting zones has increased from 2 small zones in southern Iowa during 1981 to 8 zones in 1999 that contain the majority of Iowa's turkey population (Fig. 2.5, a and b). Fall zone boundaries in 1990 encompassed 9.7 times more area than in 1981 (Table 2.12) and geographically different regions were added to open zones, notably the west and northeast portions of Iowa. Although zone boundaries did not change during 1991 - 1994, only zones 3 and 6 (northeast Iowa) had shotgun licenses available (residents only). The 5 remaining fall zones experienced 6 years of poor brood production and therefore did not have any licenses available. However in 1995, because of increased brood production in 1994, almost the entire state was opened to fall hunting. In 1999, the amount of land open to fall hunting increased slightly from 1998 with the addition of zone 8 (Fig. 2.5).

Results from a radio-telemetry study in southern Iowa and computer modeling of southern Iowa turkey mortality and hatching data suggest as much as 10% of the population could be removed during fall hunting without reducing long-term turkey populations. Past seasons' harvest have not approached this theoretical value. The present management objective is to increase fall hunting opportunities and harvest. A harvest of fall turkeys similar to the number of spring gobblers harvested is the present goal.

The number of fall licenses issued, hunter numbers and harvest increased steadily from 1981-89 (Fig. 2.6 and Tables 2.5-2.7).

As with spring seasons, fall turkey hunters have previously had exceptional statewide success rates, averaging 51% during 1981-89 (Table 2.8). However fall success rates have had considerable annual variation, ranging from 40 - 60% (Fig. 2.3). Fall license quotas generally surpassed applications from 1981-84 and license quotas filled in only one zone in 1985. With the expansion of 2 hunting zones in 1986 a large increase in applications occurred. This resulted in rejecting a number of permit applications. License quota was increased in 1987 and in 1988. After 2 application periods in fall 1988, 51 licenses remained. Therefore license quota remained unchanged in 1989 although the hunting zone area increased (Table 2.12). Because of the documented poor poult production in 1988 and 1989, license quota remained unchanged for 1990. Fall 1990 hunting zones were expanded to distribute (and hopefully reduce) hunting pressure on flocks. Continued poor statewide brood production warranted dramatic reductions in fall harvest for 1991 - 1994. Only the northeast corner (Zones 3 & 6) continued to have average brood production that allowed a fall shotgun season

Annual changes in hunter success, harvest and the age-sex composition of the fall harvest are at least partly explained by population events occurring in southern Iowa from 1981 to 1985. Excellent recruitment in the years of 1978 through 1980 produced very high turkey densities (100 wintering turkeys/mi^2 of forest on the southern Iowa Stephens Forest study area and region-wide densities of at least 40-50/mi^2). A cool wet spring in 1981 led to essentially no recruitment just prior to the first fall season. A large carryover of adults from previous successful hatches meant that hunters had high success rates in the fall of 1981, but harvested almost no juvenile turkeys. A slightly better hatch in 1982, coupled with the reduction in available adult turkeys, led to proportionally more juveniles in the bag in 1982, but the harvest and

success rates were reduced. A good hatch in 1983, produced more juveniles in the bag and an increased harvest, suggesting populations were recovering from a 2-year depression. Another good hatch in 1984 resulted in even more juveniles in the bag and again an increased harvest. Fall 1985 was similar to 1984. The greatest effect was felt in southern Iowa where spring weather was least favorable in both 1981 and 1982. Indications of over-harvest on popular public hunting areas was greatest in the years when few juveniles were present to buffer adult turkey harvest. Harvest rates of adult hens (> 2 years old), the most important age class reproductively, were greatest when few juveniles were produced and decreased to tolerable levels when recruitment was good.

A similar scenario developed during the recent 6-year (1988-93) decline in poult production. Climatic factors, i.e., 2 years of drought followed by floods in 1990, 1991, and 1993, are assumed responsible for the reduced poult production observed over that time period. Likewise, harvest and hunting success declined over the same period, presumably as a result of the decrease in poult production. Fall harvest and hunting success rate increased in 1995 following a slight increase in poult production in 1994. Harvest and hunter success increased slightly again in 1996, 1997, 1998 and 1999, but decreased slightly in 2000 and 2001. However, fall harvest levels continue to be below the levels observed in the mid-1980's.

2004: Wild turkey brood production was below the 10-year average in 2004 (Tables 2.9 and 2.10). However, turkey hunter success rates increased to slightly in 2004 (Table 2.8). Since the IDNR's main objective for wild turkeys is to maintain populations in all suitable habitats and provide high quality recreational opportunity, a conservative fall turkey hunting season was established in 1992. Shotgun license quota was reduced from 7,600 licenses available in 1990 to only 1,530 in 1992, 1993, and 1994. An increase in poult production was observed in 1994, and shotgun license quota was increased in 1995 to 3,450. Quotas were increased slightly again in 1996 to 3,850, to 4,550 in 1997, to 5,650 in 1998, to 6,225 in 1999. In 1999, zone 8 was created in north central Iowa and zone 6 was reduced east to Highway 63. All other zone boundaries remained the same as in 1998, and all zones had licenses available. In 2004, zones remained the same as 1999-2003, but quotas increased by 1,000 in Zone 4, 50 in Zone 5, 200 in Zone 7, and 75 in Zone 8 (Fig. 2.5b). Shotgun license issue (paid and free combined) decreased slightly from the 2003 level to 13,221 for the 54-day season that ran from 11 October through 3 December 2004 (Table 2.12). Over 49% of the shotgun licenses were issued free to landowners. An additional 1,549 archery-only licenses were issued for a season that ran from 1 October through 3 December, 2004 and 20 December, 2004 through 10 January, 2005. Only 8,718 shotgun hunters actually hunted for turkeys during fall 2003, but this was a record number of active hunters (Table 2.6). Thirty-seven of the active hunters harvested a turkey. Hunter success rates varied from 14% in zone 3 to 53% in Zone 5 (Table 2.8). Nonresidents were not permitted to hunt fall turkeys in Iowa this year.

Discussion: Fall turkey hunting techniques are sufficiently different from spring hunting so that past experience with spring hunting seems to have little impact on success in the fall. If anything, reliance on camouflage, sitting still, and calling (the basic spring hunting method) may be less successful and less utilized than walking and flushing turkeys in the small woodlot situations which comprise the bulk of Iowa turkey habitat. Even though fall shotgun

success rates are quite high, fall turkey hunting has not been popular. It doesn't seem to appeal to spring hunters and hunter numbers seem to be more related to zone size than anything else. Fall archery hunting has even fewer devotees.

In spite of these differences between spring and fall hunting, they have one important feature in common -- hunter concentrations on public hunting areas. Hunter densities are much greater on public hunting areas than on private lands. By the nature of fall hunting this has less impact on perceived interference between hunters than it does in spring hunting. Crowding leads to lower success rates on public areas and, on the largest most popular areas, there are some indications of excessive harvest over theoretically desirable levels. Any area that the IDNR intends to manage for quality spring hunting may have to be zoned separately in the fall.

Even in years of documented poor reproduction, hunters can still find turkeys due to Iowa's limited forest habitat and high turkey densities. Success rates are high for Iowa hunters when compared with surrounding states. Interference rates between hunters have not been documented in the fall since 1985. Interference rates have been lower during fall than in spring, which is probably due to the different techniques used for spring and fall hunting.

Fall turkey hunter densities on public areas (that were surveyed) have been nearly 50 times greater than the average hunter density for private land. Turkey harvest densities on 13 of 16 public areas surveyed equaled or exceeded the theoretical maximum allowable harvest of 2 turkeys/mi^2 of forest as determined from empirical population data gathered from Stephens State Forest (IDNR, unpubl. data). In 1986, only 4 counties sustained > 4 hunters/mi^2 of forest, combined with turkey harvests of > 2/mi^2 of forest. In 1987, with the large increase in licenses issued, 12 counties had both hunter densities > 4, and turkey harvest > 2/mi^2 of timber (out of 43 counties with reporting hunters). The high seasonal hunter densities were somewhat reduced by a 28-day season during 1987. No more than 34% of the hunters and 39% of the eligible hunters (those who had not yet bagged a turkey) were afield on any day. The opening 2 days and 4 weekend days were the most popular hunting days. There were no evident relationships between daily hunting pressure and daily success rates. To reduce daily hunter densities, hunter interference rates and increase fall recreation days, the 1988 fall season was extended to 49 days (October 10 - November 27). However, a large increase in licenses issued in 1988 increased the number of counties exceeding allowable harvest and hunter density values to 16 (out of 53 counties with reported turkey harvest). Another record license issue in 1989 resulted in 24 counties (of 49 counties with reported turkey harvest) exceeding >4 hunters, and >2 turkeys harvested/mi^2 of timber. Fewer licenses were issued in 1990 and correspondingly only 16 counties exceeded hunter and harvest rate maximums. Due to continued poor brood production, both hunter numbers and harvest was dramatically reduced during 1991 - 1993 and increased only slightly throughout 1994-2000, but decreased slightly in 2001. Unfortunately, the present management concern is how to maintain turkey numbers instead of the enviable situation of being concerned about hunter densities.

Brood Survey

History: Information on annual variations in turkey productivity is needed to evaluate the status of turkey populations in various regions of the state. Because few reliable wild turkey census techniques have been

developed, hunter success rates, turkey harvest levels, and age ratios of harvested birds are the best available indicators of relative turkey populations between hunting zones. Lewis (1975a, b) found significant correlations between both August poult:hen ratios, percent juveniles in the harvest, and total gobbler harvests in the subsequent spring in Missouri, suggesting that an index to productivity would be useful in establishing hunting regulations.

Compared to the more formalized census procedures used for more visible wildlife species, indices to eastern wild turkey productivity are generally based on random observations of broods.

Methods: A list of cooperators has been established from IDNR personnel and rural residents living in selected portions of Iowa containing established turkey populations. All rural residents living in designated survey areas are sent a form to be returned if they are willing to participate in the survey. Each cooperator is sent return-addressed postcards which are to completed and returned based on turkey broods sighted between 1 July and 31 August. Productivity indices are constructed from these returns.

Hanson (1988) compared the brood survey data with spring turkey harvest and data from a radio-telemetry study in southern Iowa. The poult:hen ratio (young/adult) was the variable that correlated best with the telemetry data. Results of additional analyses indicated that the brood survey did have some utility for forecasting turkey numbers available to the hunters in following springs. Additionally, Hanson concluded that in light of the correlations with harvest data the brood survey may also be useful for evaluating the status of turkey populations in various regions of the state. Survey statistics for 1976-2004 are summarized in Tables 2.9 and 2.10.

2004: Statewide: Wild turkey poult production per hen deceased during 2004 (54.5 poults/hen) from 2003 (5.0 poults/hen) based on 4,517 observations statewide (Tables 2.9 and 2.10; Fig. 2.4). However, the percent of hens with broods increased from the 2003 estimates (Table 2.10), but still 3% below the 10-year average. Average turkey flock size also decreased in 2004 (Table 2.9).

Northeast Region: The northeast region's production index was lower than the 10-year average for poults/hen, and 17% lower for hens seen with poults. Birds/flock also decreased by 24% from the previous year, but was 21% below the 10-year average. However, this region still continues to maintain relatively high turkey numbers when compared to other areas of the state.

Southern Region: The southern region's poult/hen ratio was below the 10-year average, but an increase (3%) of poults seen with hens was recorded, which was 22% higher than the 10-year average. However, the number of birds/flock decreased to 10% below the 10-year average.

Central Region: The number of poults/hen, the percent of hens with brood, and the number of birds per flock both decreased in 2004 in the central region from the values observed in 2003, and were lower than the 10-year average. However, the percent of hens seen with broods were 3% above the 10-year average.

Western Region: In 2003, the western region experienced a slight decrease in the poult/hen ratio, but experienced a 30% increase in birds/flock from 2003 and a 6% increase in the percent of hens seen with brood.

East-Central Region: The east-central region data indicated a 16% decrease in the poult/hen ratio over 2003, but an increase of 11% for hens seen with broods over 2003. Fewer birds/flock were observed in 2004 over 2003.

Northwest Region: This region experienced reduced turkey reproduction with 19% fewer hens seen with broods, and a 4% decrease in poults seen with hens compared to the previous year. The number of birds observed per flock were also down by 15% from 2003.

North-Central Region: The number of birds per flock and the number of poults/hen decreased by 14% in the north-central region over 2003 levels, and 5% below the 10-year average. The percent of hens with broods had also decreased by 8% in this region compared to the previous year and the 10-year average.

Youth Turkey Season

Iowa's first ever youth spring turkey season has held in April 8-10, 2005. During the 3 day season, 12-15 year olds were allowed to participate with an accompanied licensed adult (adult licensed for one of the regular seasons). A total of 1,307 youth purchased licenses for the season. Eighty-three percent of the licensees were males, with 13-year olds purchasing the most licenses for each age class.

Since the inception of ELSI (Electronic Licensing System of Iowa) in 2001, hunter age and gender has been recorded. Over the past 5 years, youth spring turkey hunters have increased every year. Since 2002, youth hunters (6-15) have increased 9% each year, while the total number of turkey licenses issued has remained the same (Fig. 2.7). During the past 5 years, male youth turkey hunter numbers peaked at age 15 while female numbers peaked at age 13.

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Figure 2.1 Iowa spring turkey hunting statewide estimates, 1974-2005.

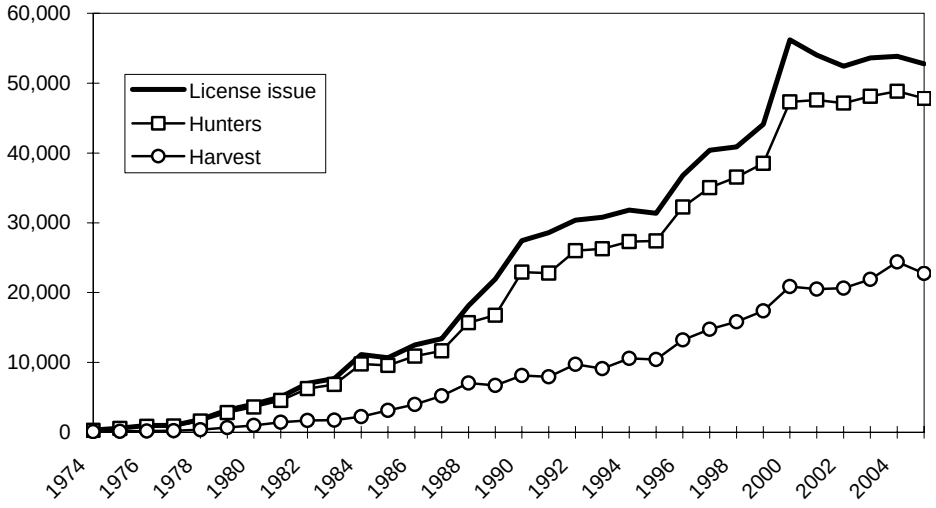


Figure 2.2 Spring turkey hunting zones, 1974 and the present.

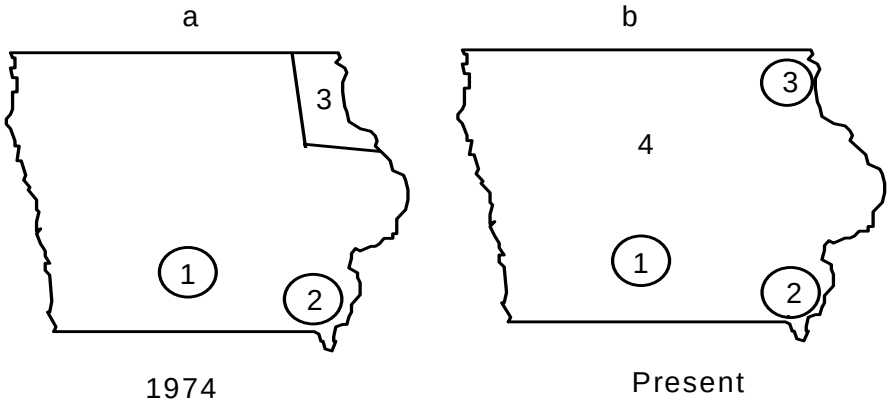


Figure 2.3 Iowa turkey harvest statewide success rates, 1974-2005.

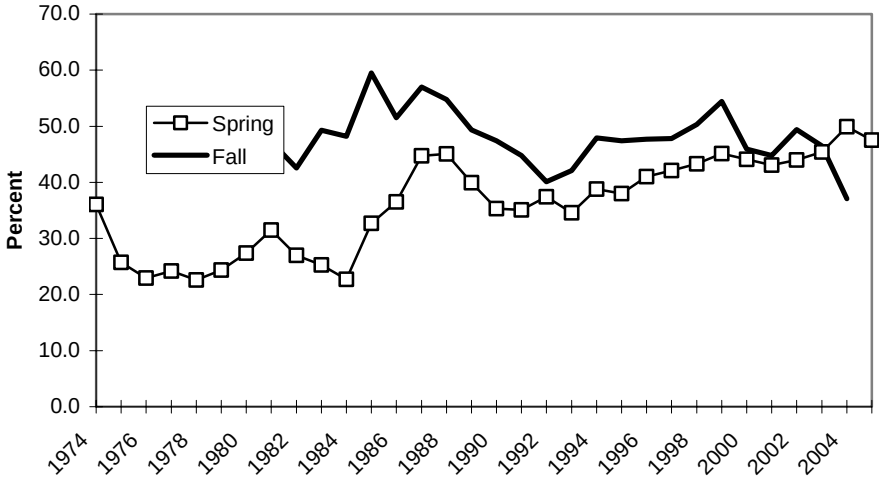


Figure 2.4 Iowa turkey brood survey statewide results, 1976-2004.

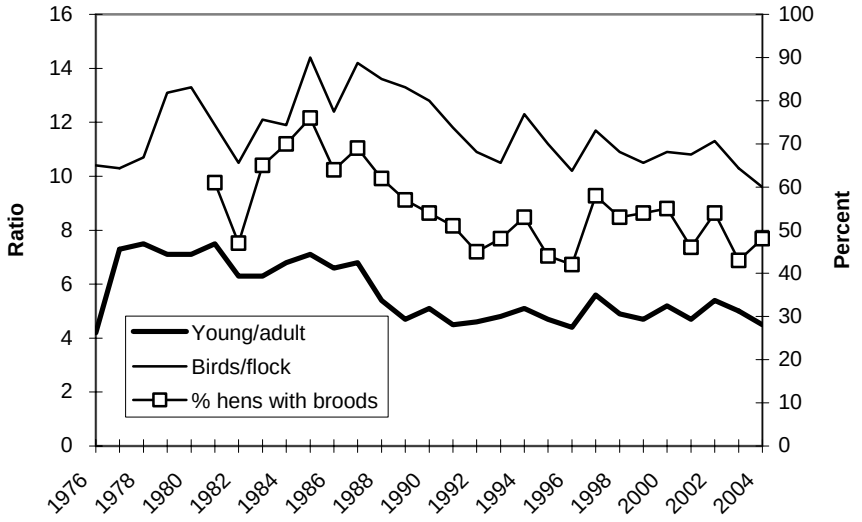


Figure 2.5 Fall turkey hunting zones, 1981 and the present.

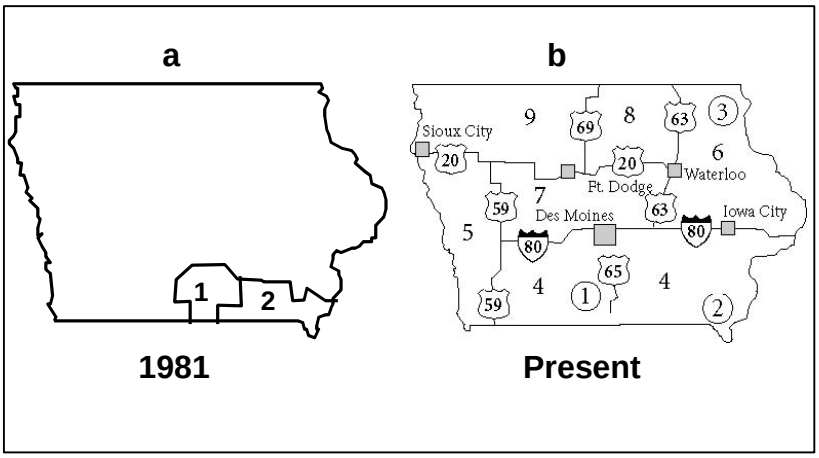


Figure 2.6 Iowa fall turkey hunting statewide estimates, 1981-2004.

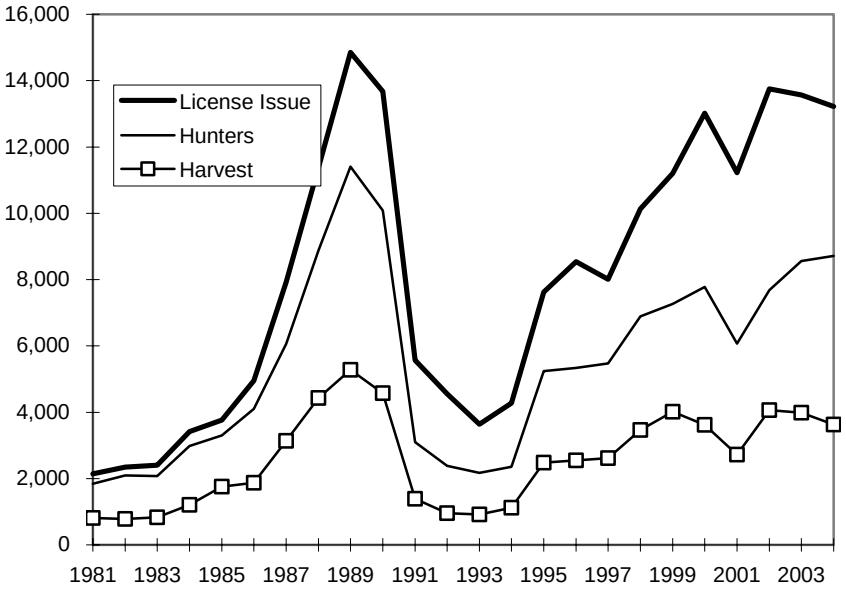


Figure 2.7 Iowa spring turkey license issue, 2001-2005.

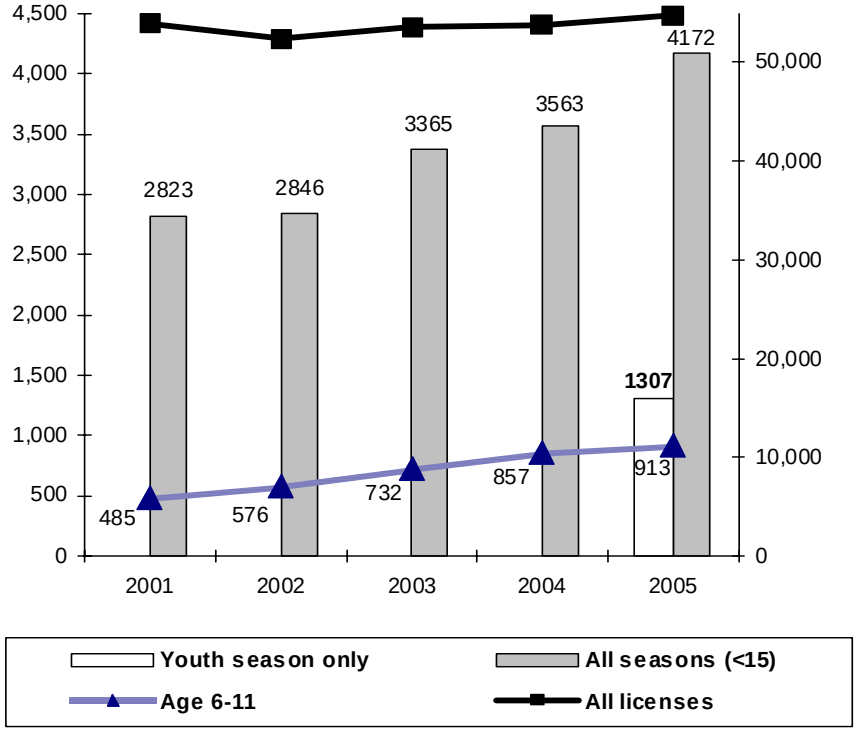


Table 2.1 Number of Iowa spring turkey-hunting licenses issued by zone, 1974-present.
Archery-only licenses included in totals licenses (not in resident total). Free landowner licenses included in

	ZONE					BOW	RESIDENT	NON-	TOTAL
YEAR	1	2	3	4	5	ONLY	TOTAL	RESIDENT	LICENSES
1974	105	113		82		-	300		
1975	168	184		248		-	600		
1976	143	273		558		-	974		
1977	235	276		494		-	1,005		
1978	280	323		1,212		-	1,815		
1979	195	298		2,662		-	3,155		
1980	195	225	357	3,227		-	4,004		
1981	195		420	4,374	67	-	5,056		
1982			297	6,592	135	-	7,024		
1983			300	7,231	165	-	7,696		
1984	259	416	325	9,849	277	-	11,126		
1985	259	449	320	9,379	277	-	10,684		
1986	273	493	339	11,032	356	-	12,493		
1987	289	507	357	11,828	404	-	13,385		
1988	268	471	324	16,438	632	-	18,133		
1989	268	505	338	20,091	736	-	21,938		
1990	261	500	322	25,331	1,030	-	27,444	184	28,658
1991	262	505	322	26,399	1,115	-	28,603	306	30,024
1992	260	487	320	28,220	1,083	-	30,370	445	31,898
1993	260	500	320	28,646	1,060	-	30,786	585	32,431
1994	262	508	324	30,714	-	-	31,808	602	32,410
1995	260	500	320	30,269	-	-	31,349	955	32,304
1996	260	487	302	35,740	-	-	36,789	1,124	37,913
1997	261	501	320	39,314	-	-	40,396	1,346	41,742
1998	260	500	320	39,783	-	-	40,863	2,005	42,868
1999	260	500	320	43,008	-	-	44,088	1,999	46,087
2000	257	392	242	55,290	-	-	56,181	2,013	58,194
2001	104	148	108	53,635	-	2,206	53,995	2,012	58,213
2002	121	207	158	51,940	-	2,491	52,426	1,944	56,861
2003	129	215	134	53,144	-	3,032	53,622	2,079	58,733
2004	132	191	128	53,404	-	3,472	53,855	2,133	59,460
2005	127	154	138	52,364	-	3,952	52,783	2,150	58,885

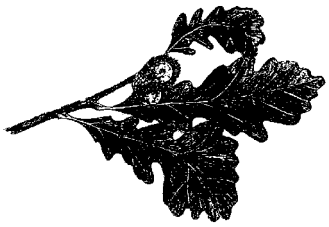


Table 2.2 Number of estimated active Iowa spring turkey hunters by zone 1974-present.
Archery-only licenses not surveyed.

	ZONE					RESIDENT	NON-	TOTAL
YEAR	1	2	3	4	5	TOTAL	RESIDENT	ACTIVE
1974	92	99		92		283		
1975	149	168		223		540		
1976	124	237		484		845		
1977	202	251		435		888		
1978	255	289		1,078		1,622		
1979	174	272		2,381		2,827		
1980	176	213	307	2,909		3,605		
1981	176		379	3,956	61	4,572		
1982	493	447	270	4,911	123	6,244		
1983	447	441	263	5,523	161	6,835		
1984	233	371	260	8,676	243	9,783		
1985	232	403	292	8,395	249	9,571		
1986	232	445	308	9,581	319	10,885		
1987	236	440	327	10,283	355	11,641		
1988	246	429	298	14,152	547	15,672		
1989	225	442	319	15,193	588	16,767		
1990	231	456	301	21,085	862	22,935	174	23,109
1991	234	477	289	20,905	868	22,773	273	23,046
1992	200	351	213	24,321	919	26,004	418	26,422
1993	124	391	197	24,648	888	26,248	542	26,790
1994	157	365	217	26,561	-	27,300	527	27,827
1995	113	331	211	26,734	-	27,389	881	28,270
1996	178	331	169	31,591	-	32,269	1,057	33,326
1997	152	356	210	34,314	-	35,032	1,229	36,261
1998	174	395	226	35,759	-	36,554	1,858	38,412
1999	139	336	179	37,873	-	38,527	1,803	40,330
2000	183	287	159	46,705	-	47,334	1,841	49,175
2001	75	103	92	47,327	-	47,597	1,822	49,419
2002	70	136	93	46,685	-	47,116	1,796	48,912
2003	100	157	107	47,755	-	48,119	1,939	50,058
2004	76	172	87	48,507	-	48,842	2,004	50,846
2005	115	124	105	47,461	-	47,805	2,120	49,925

Table 2.3 Number of estimated spring turkeys harvested by zone, 1974-present.
Archery-only licenses not included.

	ZONE					RESIDENT	NON-	TOTAL
YEAR	1	2	3	4	5	TOTAL	RESIDENT	HARVEST
1974	41	31		30		102		
1975	29	41		69		139		
1976	38	37		119		194		
1977	60	53		102		215		
1978	54	72		240		366		
1979	55	41		592		688		
1980	50	43	35	860		988		
1981	49	40	58	1,267	25	1,439		
1982	75	112	48	1,411	39	1,685		
1983	76	113	38	1,469	33	1,729		
1984	32	83	40	2,015	51	2,221		
1985	29	138	67	2,831	62	3,127		
1986	49	183	75	3,570	97	3,974		
1987	83	198	114	4,667	147	5,209		
1988	79	151	86	6,493	250	7,059		
1989	49	133	42	6,264	211	6,699		
1990	48	148	106	7,452	363	8,117	74	8,191
1991	58	144	78	7,414	274	7,968	128	8,096
1992	37	71	31	9,348	255	9,742	151	9,893
1993	26	97	39	8,638	293	9,093	217	9,310
1994	57	81	32	10,428	-	10,598	229	10,827
1995	20	81	32	10,275	-	10,408	459	10,867
1996	49	77	36	13,078	-	13,240	544	13,784
1997	8	68	28	14,647	-	14,751	605	15,356
1998	15	73	46	15,676	-	15,810	938	16,748
1999	30	71	28	17,231	-	17,360	930	18,290
2000	37	60	24	20,759	-	20,880	970	21,850
2001	34	49	29	20,383	-	20,495	941	21,436
2002	39	68	17	20,538	-	20,662	1,061	21,723
2003	51	46	29	21,743	-	21,869	1,172	23,041
2004	30	65	31	24,254	-	24,380	1,224	25,604
2005	35	61	49	22,586	-	22,731	1,187	23,918

Table 2.4 Estimated success rate of active Iowa spring turkey hunters by zone, 1974-present. Archery-only hunters not surveyed.

	ZONE					RESIDENT	NON-
YEAR	1	2	3	4	5	TOTAL	RESIDENT
1974	44.6	31.3		32.6		36.0	
1975	19.5	24.4		30.9		25.7	
1976	30.6	15.6		24.6		23.0	
1977	29.7	21.1		23.4		24.2	
1978	21.2	24.9		22.3		22.6	
1979	31.6	15.1		24.9		24.3	
1980	28.4	20.2	11.4	29.6		27.4	
1981	27.8		15.3	32.0	41.0	31.5	
1982	15.2	25.1	17.8	28.7	31.7	27.0	
1983	17.0	25.6	14.4	26.6	20.5	25.3	
1984	13.7	22.4	15.4	23.2	21.0	22.7	
1985	12.5	34.2	22.9	33.7	24.9	32.7	
1986	21.1	41.1	24.4	37.3	30.4	36.5	
1987	35.2	45.0	34.9	45.4	41.4	44.7	
1988	32.1	35.2	28.9	45.9	45.7	45.0	
1989	21.8	30.1	13.2	41.2	35.9	40.0	
1990	20.8	32.9	35.0	35.3	42.1	35.3	40.0
1991	24.9	30.7	27.8	35.6	31.1	35.1	45.0
1992	19.1	21.0	16.0	38.5	27.9	37.4	36.0
1993	21.2	24.8	19.7	35.0	32.9	34.6	40.0
1994	36.3	22.2	14.7	39.3	-	38.8	43.5
1995	17.7	24.5	15.1	38.7	-	38.0	52.1
1996	27.5	23.2	21.3	41.4	-	41.0	51.5
1997	5.3	19.1	13.3	42.7	-	42.1	49.2
1998	8.6	18.5	20.4	43.8	-	43.3	50.5
1999	21.6	21.1	15.6	45.5	-	45.1	51.6
2000	20.2	20.9	15.1	44.4	-	44.1	52.7
2001	45.3	47.6	31.5	43.1	-	43.1	51.6
2002	55.7	50.0	18.3	44.0	-	44.0	59.1
2003	51.0	29.2	27.1	45.5	-	45.4	60.4
2004	39.5	37.8	35.6	50.0	-	49.9	61.1
2005	30.4	49.2	46.7	47.6	-	47.5	56.0

Table 2.5 Number of licenses issued to Iowa fall turkey hunters by zone, 1981-present.
In 1984 and 2001-2004 landowners were not broken-down by zone but do appear in the total.
No non-resident licenses issued for fall turkey during 1991-2004.

	ZONE								RESIDENT	NON-
YEAR	1	2	3	4	5	6	7	8	BOW	TOTAL	RESIDENT
1981				1,946					193	2,139	
1982				1,995					353	2,348	
1983				1,873					529	2,402	
1984				1,999	214	612			552	3,414	
1985				2,143	295	784			540	3,762	
1986	121	190		2,403	296	1,206	74		663	4,953	
1987	107	149	105	3,934	340	2,264	148		877	7,924	
1988	103	203	106	4,861	524	4,054	282		1,243	11,376	
1989	102	200	100	6,194	891	5,792	554		1,022	14,855	157
1990	102	201	101	5,879	738	5,422	624		610	13,677	50
1991	0	0	50	0	0	4,575	0		942	5,567	0
1992	0	0	30	0	0	3,560	0		963	4,553	0
1993	0	0	30	0	0	3,118	0		488	3,636	0
1994	0	0	30	0	0	3,300	0		949	4,279	0
1995	50	50	50	2,593	330	3,518	320		715	7,626	0
1996	50	50	50	2,635	447	4,048	321		944	8,545	0
1997	50	50	50	2,156	425	4,287	224		768	8,010	0
1998	50	50	50	3,653	450	4,747	440		697	10,137	0
1999	50	50	50	3,778	433	4,894	422	212	1,317	11,206	0
2000	49	47	50	5,052	471	5,083	471	260	1,531	13,014	0
2001	44	29	38	2,500	300	2,401	200	75	1,496	11,225	0
2002	50	50	50	2,500	300	2,489	200	75	1,698	13,751	0
2003	50	50	50	3,502	450	2,402	201	75	1,674	13,566	0
2004	49	44	50	3,301	503	2,060	400	150	1,549	13,221	0

Table 2.6 Number of estimated active turkey hunters in Iowa fall turkey seasons by zone, 1981-present. Same problem for 1984 and 2001-2004 as in Table 2.5. No licenses in 1991-94 for zones other than 3 & 6. Bow hunters not surveyed after 1990. No non-resident licenses issued for fall turkey during 1991-2004.

	ZONE									RESIDENT	NON-
YEAR	1	2	3	4	5	6	7	8	UNK	BOW	TOTAL	RESIDENT
1981				1,710						136	1,846	
1982				1,807						290	2,097	
1983				1,650						425	2,075	
1984				1,763	185	530				473	2,981	
1985				1,906	250	699				445	3,300	
1986	89	168		1,953	251	1,025	68			543	4,097	
1987	76	137	92	2,966	264	1,702	87			738	6,062	
1988	100	203	91	3,576	418	3,173	249			1,066	8,876	
1989	83	187	82	4,679	585	4,572	374			846	11,408	139
1990	41	125	55	4,326	509	4,125	400			502	10,083	47
1991			35			3,064				?	3,099	0
1992			22			2,362				?	2,384	0
1993			12			2,157				?	2,169	0
1994			12			2,343				?	2,355	0
1995	30	11	33	1,943	245	2,740	234			?	5,236	0
1996	14	14	16	1,727	334	3,038	195			?	5,338	0
1997	21	18	11	1,572	336	3,293	218			?	5,469	0
1998	11	27	11	2,678	337	3,530	297			?	6,891	0
1999	22	29	21	2,701	347	3,605	300	161	79	?	7,265	0
2000	11	26	23	3,300	355	3,523	309	171	56	?	7,774	0
2001	19	20	10	1,835	221	1,809	157	67	234	?	6,069	0
2002	12	26	18	1,827	233	1,940	149	56	362	?	7,682	0
2003	13	9	15	2,442	352	1,808	139	58	534	?	8,559	0
2004	16	20	22	2,214	328	1,495	268	109	622	?	8,718	0

Table 2.7 Estimated harvest for Iowa fall turkey hunting by zone, 1981-present. Same problem for 1984 and 2001-2002 as in Table 2.5. Same comments about 1991-94 as in Table 2.6.

				ZONE							RESIDENT	NON-
YEAR	1	2	3	4	5	6	7	8	UNK	BOW	TOTAL	RESIDENT
1981				808						5	813	
1982				769						10	779	
1983				813						20	833	
1984				882	77	198				36	1,210	
1985				1,215	108	376				54	1,753	
1986	29	69		1,041	127	536	28			43	1,873	
1987	24	40	35	1,842	99	961	33			102	3,136	
1988	57	106	36	1,950	171	1,799	159			149	4,427	
1989	18	127	26	2,208	287	2,442	104			66	5,278	67
1990	0	33	39	2,052	190	2,084	135			41	4,574	14
1991			18			1,368				?	1,386	
1992			13			943				?	956	
1993			2			912				?	914	
1994			2			1,122				?	1,124	
1995	10	2	10	912	137	1,358	52			?	2,481	
1996	4	5	12	787	176	1,472	93			?	2,549	
1997	1	14	4	883	145	1,480	86			?	2,613	
1998	3	8	4	1,384	176	1,773	120			?	3,468	
1999	4	10	3	1,619	156	1,943	150	66	63	?	4,014	
2000	2	15	8	1,701	179	1,527	93	56	38	?	3,619	
2001	3	15	2	852	100	912	61	37	168	?	2,722	
2002	3	14	10	1,076	157	1,038	87	31	386	?	4,061	
2003	11	6	10	1,284	273	1,030	62	28	373	?	3,981	
2004	8	7	4	988	194	602	96	60	338	?	3,626	

Table 2.8 Success rate (to harvest 1 bird) of active Iowa fall turkey hunters by zone, 1981-present. Bow hunt not included in mean. Same comment for 1991-94 as in Table 2.6.

	ZONE									RESIDENT	NON-
YEAR	1	2	3	4	5	6	7	8	BOW	MEAN	RESIDENT
1974											
1975											
1976											
1977											
1978											
1979											
1980											
1981				47.3					3.7	47.3	
1982				42.6					3.5	42.6	
1983				49.3					4.7	49.3	
1984				50.0	41.6	37.4			7.6	48.2	
1985				63.7	43.2	53.8			12.2	59.5	
1986	32.6	41.1		53.3	50.6	52.3	41.2		8.0	51.5	
1987	31.6	29.2	38.0	62.1	37.5	56.5	37.9		13.9	57.0	
1988	57.0	52.2	39.6	54.5	40.9	56.7	63.9		14.0	54.8	
1989	22.6	68.1	32.5	47.2	49.1	53.4	28.0		7.9	49.3	48.0
1990	0.0	26.6	71.4	47.4	37.4	50.5	33.9		8.3	47.4	29.0
1991			53.2			44.7			?	44.8	
1992			62.2			39.9			?	40.1	
1993			16.7			42.3			?	42.1	
1994			17.0			48.1			?	47.9	
1995	33.3	18.2	30.3	46.9	66.3	49.6	20.2		?	47.4	
1996	28.6	35.7	75.0	45.6	53.9	48.5	47.6		?	47.7	
1997	4.8	77.8	36.4	56.2	43.2	44.9	39.4		?	47.8	
1998	27.3	29.7	36.4	52.0	52.2	50.1	40.4		?	50.3	
1999	18.1	35.5	14.6	59.2	45.1	52.8	49.9	40.7	?	54.4	
2000	18.2	57.7	34.1	51.3	50.5	42.1	30.2	32.9	?	45.9	
2001	16.1	73.7	20.0	46.4	45.3	50.4	39.3	55.7	?	44.8	
2002	27.3	56.0	39.7	55.2	59.0	52.0	55.6	52.7	?	49.4	
2003	84.3	55.6	65.9	47.3	71.0	52.1	42.8	44.8	?	46.5	
2004	50.0	30.0	13.6	39.2	53.0	36.9	31.3	49.5	?	37.1	

Table 2.9 Iowa wild turkey brood survey results by region for birds/flock and young/adult, 1976-present. Y/A=young per adult and B/F=birds per flock.

	NORTHEAST		SOUTHERN		CENTRAL		WESTERN		EAST-CENTRAL		NORTH-WEST		NORTH-CENTRAL		STATEWIDE	
YEAR	Y/A	B/F	Y/A	B/F	Y/A	B/F	Y/A	B/F	Y/A	B/F	Y/A	B/F	Y/A	B/F	Y/A	B/F
1976			4.2	10.4											4.2	10.4
1977			7.3	10.3											7.3	10.3
1978			7.5	10.7											7.5	10.7
1979			7.1	13.1											7.1	13.1
1980			7.1	13.3											7.1	13.3
1981	8.2	15.5	7.3	10.7											7.5	11.9
1982	6.1	12.6	6.2	9.3	7.1	9.5	6.6	9.5							6.3	10.5
1983	6.0	13.2	6.3	11.3	6.2	11.4	6.6	11.7	6.0	11.7					6.3	12.1
1984	6.6	12.9	7.4	11.5	4.6	10.6	6.9	12.6	6.8	10.9					6.8	11.9
1985	7.2	16.7	7.4	14.3	6.1	11.4	7.1	11.3	6.8	14.2					7.1	14.4
1986	7.0	14.1	6.2	11.8	6.6	11.7	5.7	9.3	6.8	12.5					6.6	12.4
1987	7.0	17.3	6.5	12.2	7.4	14	5.9	12.5	7.0	14.5					6.8	14.2
1988	5.0	17.1	5.6	10.1	5.3	11.3	4.6	12.6	6.5	14.3					5.4	13.6
1989	4.1	16.1	5.1	10.0	4.4	10.7	5.5	13.0	5.3	14.5					4.7	13.3
1990	5.1	15.8	4.9	9.0	2.7	7.9	6.0	12.2	4.9	11.9	7.7	11.3	6.6	8.3	5.1	12.8
1991	4.7	14.0	4.1	9.7	3.3	9.5	4.8	14.5	5.1	11.5	6.8	10.2	4.3	7.4	4.5	11.8
1992	4.9	11.8	4.3	9.4	3.0	9.1	6.0	10.2	4.5	11.9	3.0	4.0	10.0	11.0	4.6	10.9
1993	5.2	11.8	5.1	9.1	5.0	10.1	4.4	9.6	4.6	11.1	2.5	10.5	4.6	6.9	4.8	10.5
1994	5.3	13.1	5.1	11.6	4.1	10.0	5.1	16.9	4.9	11.5	5.1	11.0	6.2	11.6	5.1	12.3
1995	5.1	12.8	4.9	10.0	4.1	10.1	5.7	13.9	3.9	10.3	4.5	10.4	4.5	9.3	4.7	11.2
1996	4.6	10.4	4.5	9.9	3.9	9.4	4.4	11.2	4.5	10.4	3.1	11.1	4.4	8.9	4.4	10.2
1997	5.2	12.3	6.0	11.9	5.6	11.4	5.8	14.5	5.4	11.0	3.2	7.2	4.9	7.5	5.6	11.7
1998	5.1	11.9	5.3	10.0	5.9	9.8	4.6	10.0	4.5	11.6	4.0	11.9	4.4	10.5	4.9	10.9
1999	3.9	10.1	5.0	10.3	3.8	8.5	4.7	13.7	5.0	10.3	6.9	13.1	3.1	6.5	4.7	10.5
2000	4.9	10.5	5.3	10.5	3.8	8.2	5.1	12.2	5.3	11.1	6.1	17.4	3.8	6.7	5.2	10.9
2001	5.1	11.9	4.6	9.3	5.0	10.3	4.6	13.0	4.5	11.5	3.9	10.9	4.5	9.3	4.7	10.8
2002	4.9	10.8	5.6	10.7	5.4	9.6	5.1	11.7	5.5	12.0	5.9	13.0	5.6	13.6	5.4	11.3
2003	5.1	11.4	5.2	11.1	4.9	10.3	5.1	11.0	5.1	11.9	5.2	13.5	4.9	10.0	5.0	10.3
2004	4.3	8.7	4.7	9.3	3.8	8.1	5.0	14.3	4.3	8.7	5.0	11.5	4.2	8.3	4.5	9.6
10-year avg.	4.8	11.1	5.1	10.3	4.6	9.6	5.0	12.6	4.8	10.9	4.8	12.0	4.4	9.1	4.9	10.7
10 year % change	-11	-21.5	-8	-9.7	-18	-15	-0.2	13.9	-10.4	-20	4.6	-4.2	-5.19	-8.39	-8.35	-10.6
1 year % change	-16	-23.7	-9.6	-16	-22	-21	-1.96	30	-15.7	-26.9	-3.8	-15	-14.3	-17	-10	-6.8

Table 2.10 Iowa wild turkey brood survey results by region for reports and percent hens with broods, 1976-present. #=total reports and %=% hens with broods.

	NORTHEAST		SOUTHERN		CENTRAL		WESTERN		EAST-CENTRAL		NORTHWEST		NORTH-CENTRAI		STATEWIDE	
YEAR	#	%	#	%	#	%	#	%	#	%	#	%	#	%	#	%
1976			78													
1977			98													
1978			77	80												
1979			170	80												
1980			142	57												
1981	65	65	194	57											259	61
1982	118	62	163	60	31	42	10	23							322	47
1983	117	75	148	69	34	67	40	57	77	46					416	65
1984	106	78	134	78	13	84	41	54	76	53					370	70
1985	133	81	229	82	42	94	47	57	165	65					616	76
1986	191	74	236	63	42	55	65	64	137	55					671	64
1987	266	77	353	61	79	78	70	72	138	71					906	69
1988	379	72	394	45	138	79	90	69	278	60					1,279	62
1989	364	72	408	54	92	38	137	46	303	54					1,304	57
1990	421	66	257	46	38	59	118	38	303	49	18	46	28	14	1,183	54
1991	368	57	418	47	78	40	105	46	346	55	22	46	9	35	1,346	51
1992	344	59	431	44	49	28	68	25	387	44	18	5	9	14	1,306	45
1993	265	48	290	45	37	67	75	47	330	47	12	64	28	44	1,037	48
1994	403	53	425	49	56	61	95	62	338	56	35	42	36	46	1,388	53
1995	325	57	385	35	175	28	146	40	319	53	24	58	28	80	1,403	44
1996	425	48	428	38	134	25	68	43	371	46	37	43	68	48	1,531	42
1997	310	59	589	67	67	64	141	60	356	51	27	28	82	39	1,572	58
1998	474	59	783	49	76	37	158	48	504	53	49	78	97	61	2,141	53
1999	411	52	805	60	62	54	188	60	517	49	45	57	86	35	2,114	54
2000	293	53	759	56	74	50	210	59	350	51	41	84	59	53	1,786	55
2001	429	67	803	41	73	47	228	44	486	39	61	65	105	38	2,185	46
2002	563	64	853	51	157	56	200	57	675	45	86	71	153	77	2,742	54
2003	1230	51	2930	39	344	49	581	52	1467	39	116	70	368	53	7,142	43
2004	735	46	1792	50	184	47	464	55	1005	44	75	59	262	49	4,517	48
10-year avg.		55.6		48.6		45.7		51.8		47.0		61.3		53.3		49.7
10 year % change		-17		2.9		2.8		6.2		-6.4		-3.75		-8.1		-3.4
1 year % change		-11		22		-4.3		5.5		11		-18.6		-8.2		10.4

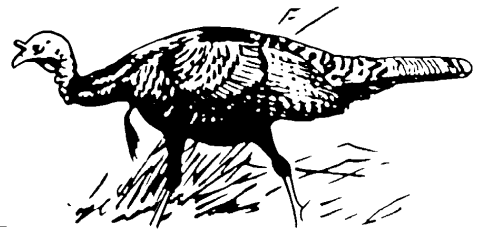


Table 2.11 Iowa's Spring turkey hunting seasons, 1974-present.

	BAG	POSSESSION	SEASON						SEASON	#	# SQ.	
YEAR	LIMIT	LIMIT	Youth	1	2	3	4	SPLITS	LENGTH	ZONES	MILES	MAJOR RULE CHANGES
1974	1	1/LICENSE		04 MAY-10 MAY	11 MAY-19 MAY				16	3	5,682	$ 10 FEE
1975	1	1/LICENSE		26 APR-02 MAY	03 MAY-09 MAY	10 MAY-18 MAY			23	3	2,749	THIRD SEASON ADDED
1976	1	1/LICENSE		24 APR-28 APR	29 APR-05 MAY	06 MAY-16 MAY			23	4	2,884	NE IOWA CLOSED FOR RESTOCKING
1977	1	1/LICENSE		21 APR-27 APR	28 APR-04 MAY	05 MAY-15 MAY			25	4	3,200	
1978	1	1/LICENSE		20 APR-26 APR	27 APR-03 MAY	04 MAY-14 MAY			25	6	3,683	
1979	1	1/LICENSE		19 APR-25 APR	26 APR-02 MAY	03 MAY-13 MAY		ZONES 1-5	25			
				26 APR-02 MAY	03 MAY-09 MAY	10 MAY-20 MAY		ZONES 6-8	25	8	9,958	$ 15, NE IOWA RE-OPENED
1980	1	1/LICENSE		24 APR-30 APR	01 MAY-07 MAY	08 MAY-18 MAY		ZONES 1-5	25			MUZZLELOADER LEGAL, W. IOWA OPEN,
				17 APR-23 MAY	24 APR-30 MAY	01 MAY-11 MAY		ZONES 6-9	25	9	12,942	STEPHENS SF SPECIAL ZONE
1981	1	1/LICENSE		14 APR-20 APR	21 APR-28 APR	29 APR-10 MAY			27	9	21,873	YELLOW RIVER SF SPECIAL ZONE,
												2ND CHOICE ON APP, 2 LICENSES AVAILABLE
1982	1	1/LICENSE		13 APR-19 APR	20 APR-27 APR	28 APR-09 MAY			27	8	21,506	
1983	1	1/LICENSE		12 APR-18 APR	19 APR-26 APR	27 APR-08 MAY			27	10	23,464	
1984	1	1/LICENSE		16 APR-19 APR	20 APR-24 APR	25 APR-01 MAY	02 MAY-13 MAY		28	12	25,172	ALL 3 SF SPECIAL ZONES, 4TH SEASON ADDED
1985	1	1/LICENSE		15 APR-18 APR	19 APR-23 APR	24 APR-30 APR	01 MAY-12 MAY		28	13	27,005	$20 FEE, DECOYS LEGAL
1986	1	1/LICENSE		14 APR-17 APR	18 APR-22 APR	23 APR-29 APR	30 APR-11 MAY		28	15	39,211	COMBO GUN-BOW LICENSE, FREE
												LANDOWNER PERMIT, ARCHERY-ONLY PERMIT
1987	1	1/LICENSE		13 APR-16-APR	17 APR-21 APR	22 APR-28 APR	29 APR-10 MAY		28	13	40,202	
1988	1	1/LICENSE		11 APR-14 APR	15 APR-19 APR	20 APR-26 APR	27 APR-08 MAY		28	11	44,112	UNLIMITED 4TH SEASON PERMITS,
												ALL DAY HUNTING
1989	1	1/LICENSE		10 APR-13 APR	14 APR-18 APR	19 APR-25 APR	26 APR-07 MAY		28	5	56,043	ENTIRE STATE OPEN
1990	1	1/LICENSE		09 APR-12 APR	13 APR-17 APR	18 APR-24 APR	25 APR-06 MAY		28	5	56,043	NONRESIDENTS ALLOWED
1991	1	1/LICENSE		15 APR-18 APR	19 APR-23 APR	24 APR-30 APR	01 MAY-12 MAY		28	5	56,043	
1992	1	1/LICENSE		13 APR-16 APR	17 APR-21 APR	22 APR-28 APR	29 APR-10 MAY		28	5	56,043	$22 FEE
1993	1	1/LICENSE		12 APR-15 APR	16 APR-20 APR	21 APR-27 APR	28 APR-09 MAY		28	5	56,043	
1994	1	1/LICENSE		18 APR-21 APR	22 APR-26 APR	27 APR-03 MAY	04 MAY-15 MAY		28	4	56,043	
1995	1	1/LICENSE		17 APR-20 APR	21 APR-25 APR	26 APR-02 MAY	03 MAY-14 MAY		28	4	56,043	
1996	1	1/LICENSE		15 APR-18 APR	19 APR-23 APR	24 APR-30 APR	01 MAY-12 MAY		28	4	56,043	
1997	1	1/LICENSE		14 APR-17 APR	18 APR-22 APR	23 APR-29 APR	30 APR-11 MAY		28	4	56,043	
1998	1	1/LICENSE		13 APR-16 APR	17 APR-21 APR	22 APR-28 APR	29 APR-10 MAY		28	4	56,043	
1999	1	1/LICENSE		12 APR-15 APR	16 APR-20 APR	21 APR-27 APR	28 APR-9 MAY		28	4	56,043	$22.50 FEE, ARCHERS ALLOWED 2 PERMITS
2000	1	1/LICENSE		17 APR-20 APR	21 APR-25 APR	26 APR-02 MAY	03 MAY-21 MAY		35	4	56,043	
2001	1	1/LICENSE		16 APR-19 APR	20 APR-24 APR	25 APR-1 MAY	02 MAY-20 MAY		35	4	56,043	
2002	1	1/LICENSE		15 APR-18 APR	19 APR-23 APR	24 APR-30 APR	01 MAY-19 MAY		35	4	56,043	$23 FEE
2003	1	1/LICENSE		14 APR-17 APR	18 APR-22 APR	23 APR-29 APR	30 APR-18 MAY		35	4	56,043	
2004	1	1/LICENSE		12 APR-15 APR	16 APR-20 APR	21 APR-27 APR	28 APR-16 MAY		35	4	56,043	
2005	1	1/LICENSE	8 APR-10 APR	11 APR-14 APR	15 APR-19 APR	20 APR-26 APR	27 APR-15 MAY		38	4	56,043	YOUTH SEASON ADDED

Table 2.12 Iowa's Fall turkey hunting seasons, 1981-present.

YEAR	BAG LIMIT	POSSESSION LIMIT	SEASON	SEASON LENGTH	# ZONES	# SQ. MILES	MAJOR RULE CHANGES
1981	1	1/LICENSE	21 OCT-01 NOV	12	2	4,032	$15 FEE
1982	1	1/LICENSE	19 OCT-31 OCT	13	2	5,254	1 GUN & 1 BOW, UNLIMITED BOW PERMITS IN SPRING ZONES
1983	1	1/LICENSE	18 OCT-30 OCT	13	2	5,254	HUNTER SAFETY REQUIRED IF BORN AFTER 1 JAN 1967
1984	1	1/LICENSE	16 OCT-28 OCT	13	3	13,685	DECOYS LEGAL; WESTERN, CENTRAL & NE IOWA OPEN
1985	1	1/LICENSE	15 OCT-27 OCT	13	3	13,685	$20 FEE
1986	1	1/LICENSE	14 OCT-26 OCT	13	6	21,575	STEPHENS & SHIMEK SF SPECIAL ZONES, STATEWIDE BOW SEASON
1987	1	1/LICENSE	12 OCT-08 NOV	28	7	21,575	2 LICENSES POSSIBLE, YELLOW RIVER SF SPECIAL ZONE
1988	1	1/LICENSE	10 OCT-27 NOV	49	7	25,402	
1989	1	1/LICENSE	09 OCT-26 NOV	49	7	29,610	NONRESIDENTS ALLOWED
1990	1	1/LICENSE	15 OCT-30 NOV	47	7	39,191	
1991	1	1/LICENSE	14 OCT-30 NOV	48	2 OF 7	9,060	LICENSES ISSUED FOR ZONES 3 & 6 ONLY (NE IOWA), $22 FEE
1992	1	1/LICENSE	17 OCT-29 NOV	44	2 OF 7	9,060	LICENSES ISSUED FOR ZONES 3 & 6 ONLY (NE IOWA)
1993	1	1/LICENSE	11 OCT-28 NOV	49	2 OF 7	9,060	LICENSES ISSUED FOR ZONES 3 & 6 ONLY (NE IOWA)
1994	1	1/LICENSE	10 OCT-30 NOV	52	2 OF 7	9,060	LICENSES ISSUED FOR ZONES 3 & 6 ONLY (NE IOWA)
1995	1	1/LICENSE	16 OCT-30 NOV	46	7	39,191	
1996	1	1/LICENSE	14 OCT-30 NOV	48	7	39,191	
1997	1	1/LICENSE	13 OCT-30 NOV	49	7	39,191	
1998	1	1/LICENSE	12 OCT-30 NOV	50	7	39,191	
1999	1	1/LICENSE	11 OCT-30 NOV	51	8	44,056	ZONE 8 ADDED, $22.50 FEE
2000	1	1/LICENSE	16 OCT-30 NOV	46	8	44,056	
2001	1	1/LICENSE	15 OCT-30 NOV	47	8	44,056	
2002	1	1/LICENSE	14 OCT-30 NOV	48	8	44,056	$23 FEE
2003	1	1/LICENSE	13 OCT-5 DEC	54	8	44,056	
2004	1	1/LICENSE	11 OCT-3 DEC	54	8	44,056	

FURBEARERS

According to Iowa Code 109.97, every fur dealer must report the number of raw furs purchased from Iowa trappers and hunters by May 15 of each year. Table 3.1 shows the number of raw furs purchased from the 1930-31 season through the present. This information gives a retrospective view of the status of various fur populations not only historically, but from year to year as well.

For example, the muskrat harvest data show that while muskrat harvests are cyclic, the harvests of the 1930s are not much different from the 1960s, 1970s, and 1980s. Drought cycles directly influenced muskrat populations and consequently harvest. During the droughts of the 1930s, 1950s and most recently 1988-89 and 1989-90 muskrat harvests were substantially reduced. The drought followed by extremely high water from 1990 through 1996, plus the reduced fur market are the main reasons why the last 9 years of harvest are the lowest since the 1960-61 season. The 1993-94 season did, however, see a 32 percent increase in the muskrat harvest while historically, the harvest was still low. The mere abundance of muskrats still allowed for this substantial increase in harvest. Because of the muskrat's prolific reproductive capability, populations responded quickly as adequate water conditions returned. In fact, 1993 brought modern day record muskrat populations back to the majority of Iowa's marshes. In 1997, after an extended high water period, "exploding" muskrat populations, and thus emergent vegetation disappeared due to muskrat "eat outs", the population has rapidly declined. In fact muskrats continue at modern day record low levels throughout most of the marsh country in the United States. Low populations of muskrats have now occurred for over a decade and most professionals have no clue why their numbers remain at record low levels. Extended natural droughts and/or managed water level draw-downs will allow marshes to re-vegetate and muskrats should increase accordingly. We have not seen the right type of extended drought, so perhaps when the “right” drought does occur muskrat populations will respond on marshes. Unfortunately many of the wetland areas do not have the capability of “artificial” draw-downs. Habitat changes and reduced water quality will likely keep muskrats on those marshes without draw down capability at low levels. Stream and river valley corridors will likely continue to have low muskrat populations because of deteriorating habit and declining water quality.

Mink harvests were higher in the 1930s and 1940s then remained somewhat lower in the 1950s and 1960s with the 1986-87 harvest similar to the 1930s once again. Low numbers for both species in 1939 reflect statewide season closure except for the Mississippi River. A similar situation occurred for muskrats in 1947. The 1989-90 through 1991-92 mink harvest was substantially reduced due to overall lower fur values and consequently less trapper effort. During 1994-95, mink harvest increased primarily because of the fact that fur value speculation increased trapping pressure on mink because muskrats populations were so low. Recent mink harvest trends generally show declines, likely due to overall reduced trapping effort that is occurring with most furbearer species, and especially the muskrat.

Raccoons have been an interesting species with comparatively low harvests until 1967 and then noticeably increased harvests through 1986-87 when a record

390,800 raccoon were taken (Fig. 3.1). A quarter million raccoons were harvested annually for 15 years (1973-1987) and yet the population remained very high. It is likely that the high raccoon harvest has kept raccoon populations at very healthy levels. Since 1989 the raccoon harvest has leveled off at near 100,000 pelts. This also is indicative of the suppressed raccoon fur values of the past several years. However, renewed interest and increasing pelt values were responsible for a slow increase in raccoon harvest in the late 1990s, with the 2001-02 harvest approaching 1.5 raccoon pelts.

Spotted skunk (civet cat) harvest levels indicate that their numbers dropped off substantially before the season was closed in the mid-1970s. During recent years the DNR has not received more than 1 or 2 spotted skunk reports. Since 1992 the only recent spotted skunk report the DNR has received is a roadkill in 2001 in Ringgold County. Spotted skunks should at least be considered a threatened, if not, endangered species, and perhaps even extirpated.

Red fox harvests have increased significantly since the mid-1960s, stabilizing between 12,000 and 20,000 fox pelts over the past couple of decades. The red fox population is making a very slow comeback in the modern day traditional fox areas of northwest and north-central Iowa. Active fox dens, however, are a rarity compared to the 1970s and 1980s. An outbreak of mange in the early 1980s and the suppressed fur market greatly reduced the fox population as well as the harvest during the past 10 seasons.

Similar trends occurred with coyotes, with harvest figures ranging between 6,000 and 12,000 pelts. Nearly 10,300 coyote pelts were purchased during the 1992-93 fur season. That is not a record coyote harvest, but is double the previous season. The 1994-95, 1995-96 and 1996-97 seasons showed a decrease in the coyote harvest, but the population remains high statewide. The late 1990s harvest remained fairly stable.

Beaver seasons were closed in the 1930s and early 1940s. They reopened in the mid-1940s on a restricted basis and harvest has increased in the past decade to between 6,000 and 17,000 hides. About 50 percent fewer beaver were purchased from Iowa dealers during the 1991-92 season as compared to 1987-88. There has been a somewhat increasing beaver market for the past few years but the hard work and difficult weather conditions for trapping keep the beaver harvest relatively low. Increasing interest in beaver fur did bring a noticeable increase in pelts purchased in 1992, but that increase was supplemented by beaver hides that were kept frozen from previous years and dumped on the market in hopes of capitalizing on a higher beaver pelt prices. The 1993 and 1994 beaver take decreased about 25 percent and it declined somewhat more in 1995. The beaver population is high and they continue to generate many complaints from landowners over beaver flooding and foraging on crops and blocking tiles.

Several factors need to be considered when reviewing these data. Water levels certainly affect the harvest of aquatic furbearers such as muskrats and beaver. Freeze-up and season opening dates also have some effect. Higher fur values usually mean higher harvest levels. Weather greatly impacts the harvest of many furbearing animals such as raccoon, fox, and coyotes. Mild weather and open winters are generally better for all trappers and coon hunters. Fox and coyote hunters harvest more animals when cold, snowy weather exists. Very notable to the entire furbearer season in 2000-2001 was the fact that cold weather froze marshes earlier and record cold and snows made this season one of the most

difficult ever for fur pursuing enthusiasts. Weather conditions did, in fact, reduce the harvest of most furbearer species in 2000-2001. During 2001-2002 season weather conditions were nearly the opposite of the previous winter. These warm, mild, and comparatively dry conditions were conducive to better harvests of several species. The 2002-2003 season started out very mild but turned much colder later in the season providing great opportunity for fur harvesters early in the season but the later colder weather slowed fur harvesting considerably. With the exception of the spotted skunk and perhaps weasel, these harvest data and other qualitative information indicate that most furbearers have adapted well to the changing environment that humans have created.

There appears to be a declining trend in the pelts harvested in nearly all species except for raccoon which tends to be the 'bread and butter' species for furharvesters. It will be interesting to see if the declining trends continue. Raccoon pelt values still account for over 60% of the total value of furs purchased in Iowa.

Because of the squabbles and debates that occur between hunters and trappers over their "rightful share" of the resource, the DNR in 1975 began asking fur buyers to estimate the percent of foxes, coyotes and raccoons taken by hunters versus that taken by trappers. The DNR believes the information is helpful in determining the impact of hunters and trappers on furbearer populations. The breakdown by year is shown in Table 3.2. Fox hunters historically have had greater impacts on the population in years when snow conditions make "spotting" foxes easier, while in mild open winters trappers do better. Because there are considerably more fox hunters than fox trappers, in years with more snowfall, hunters have a greater impact on the fox population than trappers. Cold and snowy weather favors the fox and coyote hunters and dry mild winter's favor trapping enthusiasts. An extensive outbreak of mange in foxes throughout the northern half of the state has greatly reduced fox numbers, and has also contributed to reduced fox harvest during the decade of the 1990s and the early 2000s. Although expected, it does not appear that the red fox will be able to make a very high comeback because of the persistence of mange and the currently ever present coyote population.

Mild open winters benefit both raccoon hunters and trappers, again because raccoon hunters outnumber raccoon trappers, they have the higher impact on the population. With the advent of the furharvester license, in 1986 it is likely that the demarcation between hunter and trapper harvests will become less distinct as one license allows them to pursue both activities.

Coyote hunters take substantially more coyotes than trappers, but this relates to the fact that there are considerably more coyote hunters than coyote trappers. Also, coyotes are certainly more difficult to trap than foxes and raccoons, thus the generally lower percentage of coyotes trapped each year as compared to those hunted. This is supported by the information on Table 3.2.

In 1978 the Iowa DNR initiated a Raccoon and Deer Spotlight Survey in an effort to establish population trend index for raccoon and deer. Table 3.3 shows the results of the survey through present. Based on the mean number of raccoons observed per route it appears that the raccoon population has fluctuated considerably (Fig. 3.2). Low harvests appear associated with increased raccoons observed per route the subsequent spring. The spotlight survey index of the 1990's have been the highest ever recorded since the survey began in 1978. Reduced raccoon harvest since 1987 is most likely the major reason for the record high population of recent years. Recent

years have shown a slow declining trend in raccoon numbers according to the raccoon-deer spotlight survey. In 2005 there were 21.1 raccoons observed per raccoon spotlight survey while in 2004, 20.9 were observed. If the spotlight survey is a true indicator of population trends, then the raccoon population has been fairly stable for the past several years.

The raccoon harvest accounts for nearly 60 percent of the total fur value (Table 3.4). A record harvest of 390,000 raccoons occurred during the 1986-87 season, but, by 1989-90, over a quarter of a million less raccoons have been harvested. During the last 3 years of the 1990s the raccoon market has softened considerably and this will likely reduce pressure on the raccoon population. However, since 2000 raccoon fur values are showing some significant increase.

Historically, pelt prices of mink peaked in the mid-1940s and have fluctuated since then between about $10 and $20 (Fig. 3.4). Red fox prices peaked in the late 1970s at about $65. Iowa's total fur value reached a record $15.5 million in 1979. During the past 6 years between $1 and $1.8 million of fur pelts have been harvested. Historical season dates are presented in Table 3.5

The European Union, EU (formerly called the European Economic Community, EEC) has threatened to discontinue the importation of furs from countries still allowing the use of leg-hold/foot-hold traps. This has been scheduled to go into effect on January 1, 1995, 1996, and again in 1997. If this actually ever goes into effect it could mean the collapse of the U.S. commercial fur harvest and trade, as we currently know it. Oriental countries such Korea and China are developing a fur economy/trade and that could help considerably because currently the European countries account for over 75 percent of the U.S. fur market. International trade, fur fashion trends, tariff, and governmental politics will determine what ultimately happens.

In late 1997, an “understanding” was reached with the European Union, the United States and other countries involved. The European markets would remain open to the U.S. fur trade. Over the next several years the U.S. would develop scientifically based best management practices (BMP’s) for trapping animals with restraining traps. The Iowa Department of Natural Resources, in cooperation with 3 local trappers, was involved in testing 4 types of traps for raccoons in 1998. These were 1.5 coil spring with offset jaws, the #11 longspring, the #11 longspring with offset jaws, and the Tomahawk cage trap. Ohio, Wisconsin and Missouri did the same trap tests in their states. Several BMP studies are complete and results are being periodically published. Iowa will partake in a BMP effort to check the efficiency of 1 ½ coil spring and 110 Conibear traps for primarily mink and muskrat trapping.

The Department of Natural Resources is also developing parameters for a restricted river otter and bobcat harvest season.

Some controversies are now developing between the furharvester ranks and the Fur Resources Technical Committee of the International Association of Fish and Wildlife Agencies. Some of the most used traps of the past (particularly the 1 ½ coil spring trap) have not scored well under the BMP process, particularly for trapping raccoons. The self-mutilation of raccoons chewing their foot or leg when in certain foothold traps present challenges for trappers and the type of trapping systems they use. More information and research will have to occur before we can finalize the BMPs for raccoons. The BMP draft for trapping coyotes in the Eastern United States is currently available and is being distributed

nation wide. Reception to that BMP has predominately been favorable. Drowning sets are not considered “humane” and that has been very frustrating for trappers as well as some professionals.

While the “understanding” with the European Union is not a binding agreement, we see it as a victory for the continued legitimate use of the leg/foot hold trap into the 21st century. Hopefully the BMP process will also help us improve restraining foothold traps to allow their continued use long into the future. The BMP process should be in the waning stages of its research efforts and time will tell how well the trapping public will accept the results.

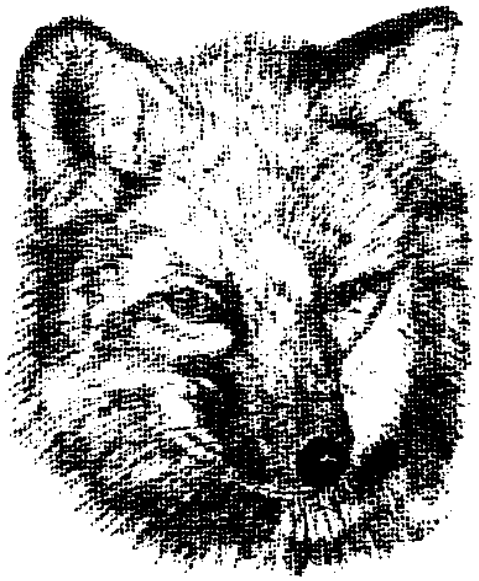


Table 3.1 Furbearer harvest in Iowa listed by species (1930-present). Data for each year includes harvest for the winter of the succeeding year, eg. 1930=1930+1931(winter).

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

Year	Muskrat	Mink	Skunk	Raccoon	Civet	Red Fox	Gray Fox	Opossum	Weasel	Coyote	Badger	Beaver
1977	257,237	13,037	3,588	264,367	7	22,831	1,640	36,186	36	12,011	1,900	3,432
1978	467,721	23,277	6,545	251,985		24,348	2,115	26,160	82	10,627	1,936	4,327
1979	741,403	31,270	10,022	308,277		17,629	3,093	10,978	122	7,745	3,274	12,498
1980	739,419	32,950	5,616	235,717		20,602	2,175	11,664	32	6,847	2,427	11,831
1981	521,945	28,455	1,913	291,227		22,385	1,710	18,730	16	9,860	1,946	5,705
1982	428,252	21,307	1,194	255,926		18,527	1,953	16,761	16	8,930	1,754	5,809
1983	464,793	22,245	1,152	261,875		21,257	1,185	16,179		9,636	1,298	8,563
1984	372,466	28,346	1,032	334,179		18,916	1,896	21,455		7,809	1,754	16,323
1985	254,412	17,116	1,861	270,805		16,346	1,114	16,296		7,858	975	14,931
1986	482,811	31,139	2,540	390,773		19,740	1,593	30,760		10,582	2,520	17,778
1987	515,611	27,712	1,198	307,587		19,666	1,091	27,623		10,348	1,642	13,509
1988	192,214	13,996	712	190,556		15,445	769	19,824		4,650	1,043	18,459
1989	73,415	8,293	245	118,653		13,359	374	8,114		4,073	468	8,706
1990	70,133	7,363	189	103,468		14,268	393	6,243		5,068	503	9,246
1991	91,206	8,469	211	110,342		15,463	429	7,411		5,213	572	8,943
1992	124,638	12,839	791	110,203		14,660	1,036	8,192		10,286	621	15,839
1993	163,842	13,946	643	118,463		12,986	836	6,243		7,313	571	11,788
1994	178,683	11,819	510	112,686		12,243	789	6,782		6,986	502	11,643
1995	158,241	20,392	786	118,136		14,136	948	9,781		8,462	614	10,678
1996	123,460	18,946	693	123,698		12,402	721	7,643		7,159	832	10,481
1997	113,621	16,832	649	149,492		12,896	768	6,012		6,992	796	11,122
1998	90,126	16,461	536	106,641		11,646	681	5,123		5,786	642	10,336
1999	86,998	15,931	528	101,233		11,968	631	4,649		5,231	597	10,108
2000	84,972	15,235	469	94,989		11,103	576	3,922		5,348	506	10,478
2001	78,867	14,162	398	143,206		12,349	529	3,361		6,702	487	11,287
2002	89.421	14,986	417	118,531		14,869	507	2,905		5,746	402	10,431
2003	54,919	10,711	842	177,315		10,608	365	6,184		8,178	912	8,591
2004	45,516	11,662	930	179,185		7,122	198	5,858		5,197	761	6,221

Table 3.2 Percentage of foxes, raccoons and coyotes purchased from hunters and trappers determined from furbuyer reports (1975-present). Data for each year includes harvest from the succeeding year, eg. 1930=1930+1931(winter).

	Fox			Raccoon			Coyote		
Year	% by trapper	% by hunter	% by unknown	% by trapper	% by hunter	% by unknown	% by trapper	% by hunter	% by unknown
1975	45	48	7	28	60	12	18	72	10
1976	55	41	4	28	66	6	28	68	4
1977	36	55	9	24	68	8	18	72	10
1978	37	58	5	31	61	8	17	74	9
1979	53	32	15	30	58	12	30	59	11
1980	66	29	5	33	60	7	33	60	7
1981	38	46	16	42	46	12	20	74	6
1982	47	45	8	35	53	12	25	69	6
1983	33	59	8	37	50	13	17	67	16
1984	49	31	20	33	41	26	26	60	14
1985	39	54	7	37	52	11	23	65	12
1986	59	35	6	46	49	5	34	62	4
1987	53	43	4	49	47	4	32	62	6
1988	58	34	8	49	46	5	30	67	3
1989	48	28	24	35	45	20	24	61	15
1990	43	46	11	38	55	7	28	66	6
1991	44	49	7	41	51	8	25	67	8
1992	40	52	8	45	50	5	36	54	6
1993	43	50	7	43	52	5	34	57	9
1994	39	55	6	44	46	10	33	59	8
1995	41	52	7	47	45	8	30	65	5
1996	44	48	8	48	48	4	32	58	10
1997	40	47	13	48	46	5	29	62	9
1998	46	48	6	46	47	5	33	63	4
1999	45	46	9	42	53	5	34	61	5
2000	34	58	8	38	46	16	31	58	11
2001	52	43	5	43	47	10	36	56	8
2002	56	38	6	48	42	10	32	59	9
2003	52	44	4	49	43	8	35	58	7
2004	49	45	6	43	49	8	32	60	8
Average	46.2	47.2	8.6	40.0	50.7	9.2	28.5	63.2	8.2

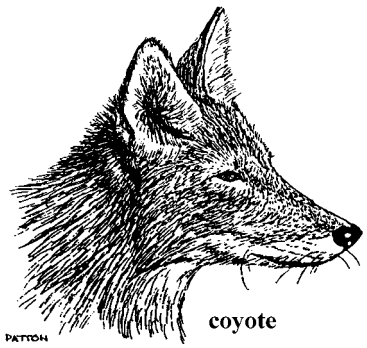


Table 3.3 Results of the Iowa raccoon spotlight survey with raccoon harvest and pelt price (1978-present). The spotlight survey is conducted in April each year. Harvest is from previous year.

Year	# Routes	Raccoon harvest	Mean # observed	Pelt Prices
1978	57	264,367	10.3	22.27
1979	83	251,985	11.2	31.18
1980	82	308,277	8.2	29.97
1981	85	235,717	8.9	21.47
1982	85	291,227	10.4	27.69
1983	84	255,926	12.8	16.54
1984	82	261,875	12.9	14.23
1985	84	334,179	11.5	18.94
1986	83	270,805	10.5	13.91
1987	80	390,773	11.3	18.22
1988	79	307,587	12.0	16.65
1989	83	190,556	14.8	7.96
1990	84	118,653	17.0	4.74
1991	86	103,468	16.7	4.62
1992	84	110,342	18.2	4.96
1993	82	110,203	21.5	5.36
1994	84	118,463	20.8	5.81
1995	89	112,686	21.1	6.89
1996	87	118,136	24.4	6.83
1997	89	123,698	23.5	8.26
1998	88	149,492	21.9	7.79
1999	88	106,641	23.3	7.21
2000	88	101,233	22.3	8.13
2001	88	94,989	24.3	9.26
2002	88	143,206	20.7	11.69
2003	88	118,531	21.1	12.16
2004	88	177,313	20.8	10.11
2005	88	179,185	21.1	9.62

Table 3.4 Value of important furbearer species taken in Iowa (1930-present). Data for each year includes harvest from the winter of the succeeding year, e.g. 1930 = 1930 & 1931 (winter).

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

	Mink		Muskrat		Raccoon		Red Fox		All Species
	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Mean Price	Total Value	Total Value
1977	12.44	162,180	4.77	1,227,020	22.27	5,887,453	49.53	1,130,819	8,871,156
1978	14.48	337,050	4.49	2,100,067	31.18	7,856,892	64.65	1,574,098	12,516,946
1979	19.04	595,380	5.64	4,181,512	29.97	9,239,061	48.71	858,708	15,499,322
1980	18.20	599,690	5.88	4,347,783	21.47	5,060,843	42.88	883,413	11,269,768
1981	17.99	511,905	3.84	2,004,268	27.69	8,064,075	46.29	1,036,201	12,021,854
1982	11.18	238,212	2.18	933,589	16.54	4,233,016	28.85	534,503	6,235,053
1983	16.03	356,481	2.30	1,152,686	14.23	3,726,481	33.16	704,882	6,180,169
1984	14.22	403,080	2.88	1,072,702	18.94	6,329,350	25.24	477,439	8,574,748
1985	11.76	201,274	1.89	480,838	14.34	3,883,343	16.70	272,978	5,163,651
1986	20.79	647,379	3.39	1,636,729	18.22	7,119,884	20.73	409,210	10,335,629
1987	20.76	575,301	3.32	1,711,828	16.65	5,121,323	18.07	355,365	8,097,250
1988	22.06	308,751	2.05	394,038	7.96	1,516,825	12.15	187,656	2,602,695
1989	16.34	138,890	1.02	76,500	4.74	568,800	9.70	135,800	1,018,622
1990	18.26	134,448	2.08	145,876	4.96	513,201	10.22	145,898	1,074,761
1991	15.49	131,184	1.96	178,764	5.36	591,433	9.63	148,909	1,198,863
1992	19.46	249,846	1.58	196,928	6.36	700,891	8.43	123,078	1,579,821
1993	16.78	234,014	1.83	299,831	5.81	688,270	8.98	116,614	1,388,729
1994	14.13	167,003	1.95	348,432	6.89	706,686	9.86	120,716	1,409,848
1995	18.01	367,259	1.78	281,670	6.83	808,371	8.76	123,831	1,745,504
1996	19.36	336,795	1.56	182,598	8.92	1,103,386	8.43	104,549	1,661,687
1997	17.86	302,303	1.51	171,568	7.79	1,169,643	7.04	90,788	1,729,199
1998	16.05	264,199	1.66	149,609	7.21	768,882	8.21	95,637	1,203,362
1999	19.16	255,583	1.55	134,847	8.13	823,024	9.68	115,850	1,329,304
2000	15.46	235,533	2.09	177,591	9.26	879,598	9.86	109,476	1,378,689
2001	17.23	244,011	2.43	191,647	11.69	1,674,078	10.86	134,110	2,168,918
2002	14.96	244,191	1.85	165.429	12.16	1,441,37	11.36	168,912	2,069,896
2003	10.51	112,573	2.06	113,133	10.11	1,792,655	19.16	203,441	2,589,802
2004	10.27	119,769	1.85	85,115	9.62	1,723,760	14.68	104,551	1,965,131

Table 3.5 Iowa's furbearer seasons
(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

			TRAPPING		HUNTING	
		OPENING START	SEASON DATES		SEASON DATES	
YEAR	SPECIES	TIME	OPENING	CLOSING	OPENING	CLOSING
1996-97	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 2	Jan 31		
	be	8 a.m.	Nov 2	Apr 15		
	rf, gr	8 a.m.	Nov 2	Jan 31	Nov 2	Jan 31
	ra, op	8 a.m.			Nov 2	Jan 31
	wc	8 a.m.			Jun 15	Oct 31
	co	8 a.m.	Nov 2	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
1997-98	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 1	Jan 31		
	be	8 a.m.	Nov 1	Apr 15		
	rf, gr	8 a.m.	Nov 1	Jan 31	Nov 2	Jan 31
	ra, op	8 a.m.			Nov 2	Jan 31
	wc	8 a.m.			Jun 15	Oct 31
	co	8 a.m.	Nov 2	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
1998-99	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 7	Jan 31		
	be	8 a.m.	Nov 7	Apr 15		
	rf, gr	8 a.m.	Nov 7	Jan 31	Nov 7	Jan 31
	ra, op	8 a.m.			Nov 7	Jan 31
	wc	8 a.m.			Jun 15	Oct 31
	co	8 a.m.	Nov 7	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
1999-2000	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 6	Jan 31		
	be	8 a.m.	Nov 6	Apr 15		
	rf, gr	8 a.m.	Nov 6	Jan 31	Nov 6	Jan 31
	ra, op	8 a.m.			Nov 6	Jan 31
	wc	8 a.m.			Jun 15	Oct 31
	co	8 a.m.	Nov 6	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
2000-01	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 4	Jan 31		
	be	8 a.m.	Nov 4	Jan 31		
	rf, gr	8 a.m.	Nov 4	Jan 31		
	ra, op	8 a.m.			Nov 4	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 3	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
2001-02	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 3	Jan 31		
	be	8 a.m.	Nov 3	Jan 31		
	rf, gr	8 a.m.	Nov 3	Jan 31		
	ra, op	8 a.m.			Nov 3	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 3	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	

Table 3.5 Iowa's furbearer seasons
(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

			____TRAPPING____		_____HUNTING_____	
		OPENING START	SEASON DATES		SEASON DATES	
YEAR	SPECIES	TIME	OPENING	CLOSING	OPENING	CLOSING
2002-03	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 2	Jan 31		
	be	8 a.m.	Nov 2	Jan 31		
	rf, gr	8 a.m.	Nov 2	Jan 31		
	ra, op	8 a.m.			Nov 2	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 2	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
2003-2004	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 1	Jan 31		
	be	8 a.m.	Nov 1	Jan 31		
	rf, gr	8 a.m.	Nov 1	Jan 31		
	ra, op	8 a.m.			Nov 1	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 1	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
2004-2005	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 6	Jan 31		
	be	8 a.m.	Nov 6	Jan 31		
	rf, gr	8 a.m.	Nov 6	Jan 31	Nov 6	Jan 31
	ra, op	8 a.m.			Nov 6	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 6	Jan 31	cont open season	
	spsk, bc, ot		cont closed season		cont closed season	
2005-2006	mi, mu, ra, we, sk, ba, op	8 a.m.	Nov 5	Jan 31		
	be	8 a.m.	Nov 5	Jan 31		
	rf, gr	8 a.m.	Nov 5	Jan 31	Nov 5	Jan 31
	ra, op	8 a.m.			Nov 5	Jan 31
	wc	8 a.m.	Jun 15	Oct 31	Jun 15	Oct 31
	co	8 a.m.	Nov 5	Jan 31	cont open season	
	spsk, bc, ot, gwo		cont closed season		cont closed season	

SPECIES ABBREVIATIONS: mi = mink, mu = muskrat, ra = raccoon, be = beaver, ba = badger
stsk = striped skunk, spsk = spotted skunk, op = opossum, rf = red fox, gf = gray fox
co = coyote, we = weasels, wc = woodchuck, ot = otter, bc = bobcat, gwo = gray wolf

*a) During 1966-67 through the 1970-71 seasons on state game management areas and the closed-to-hunting areas of Federal Refuges, the season will open at noon the day following the close of the duck season to 12:00 midnight Feb. 28.

*b) During 1971-72 and 1972-73 seasons, Zone 1A is bounded on the east by U.S. Highway 169 from the Minnesota border to its junction with U.S. Highway 20, west on Highway 20 Highway 59, and south on 59 to the Missouri Border. Zone 2A includes the remainder of the state.

*c) During 1972-73 through 1974-75 seasons, Zone 1b is north of U.S. Highway 20, the 2nd Saturday of October through February 15 in 1973 and 1974 and January 31 in 1975. Zone 2b is remainder of state.

*d) During 1971-72 through 1978-79 seasons except for beaver water sets were permitted only during the open mink and muskrat season.

*e) During 1974-75 through 1987-88 seasons a more restrictive beaver trapping season occurred on the Federal Upper Mississippi River Refuge north of Interstate 80.

*f) Weasel season was closed during 1976-77 season; reopened 1988-89 season.

*g) Spotted skunk season was continuous closed season from 1976-77 through the present.

*h) Bobcat season officially listed as closed in 1985-86 regulations, however, it was essentially protected in prior years.

*i) Permanent woodchuck hunting rule season dates of June 15 to October 31 established with 1976-77 season.

*j) First restricted coyote trapping season.

Figure 3.1 Iowa raccoon & red fox harvest, (1930 - present)

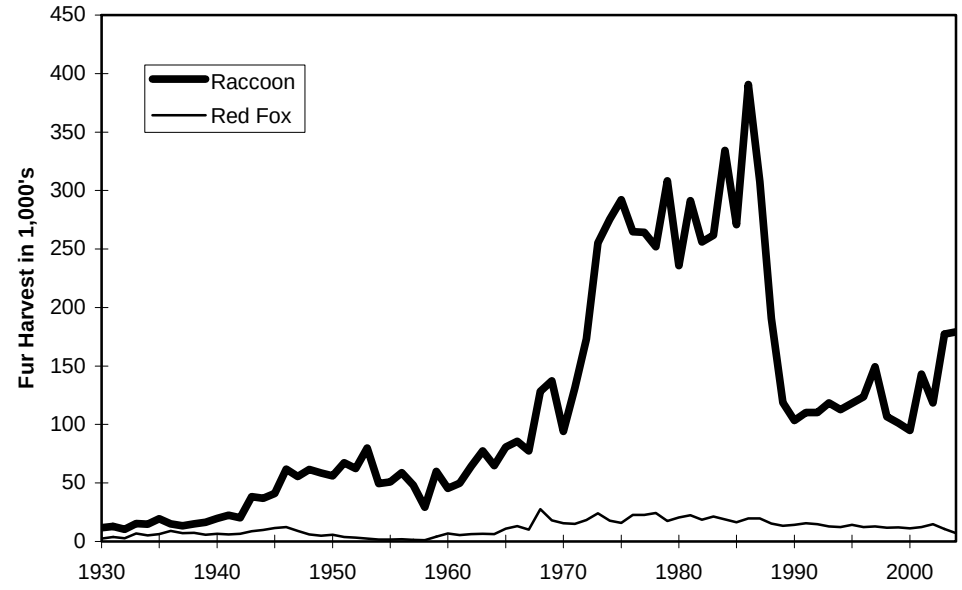


Figure 3.2 Relationship of the spotlight index and raccoon harvest.

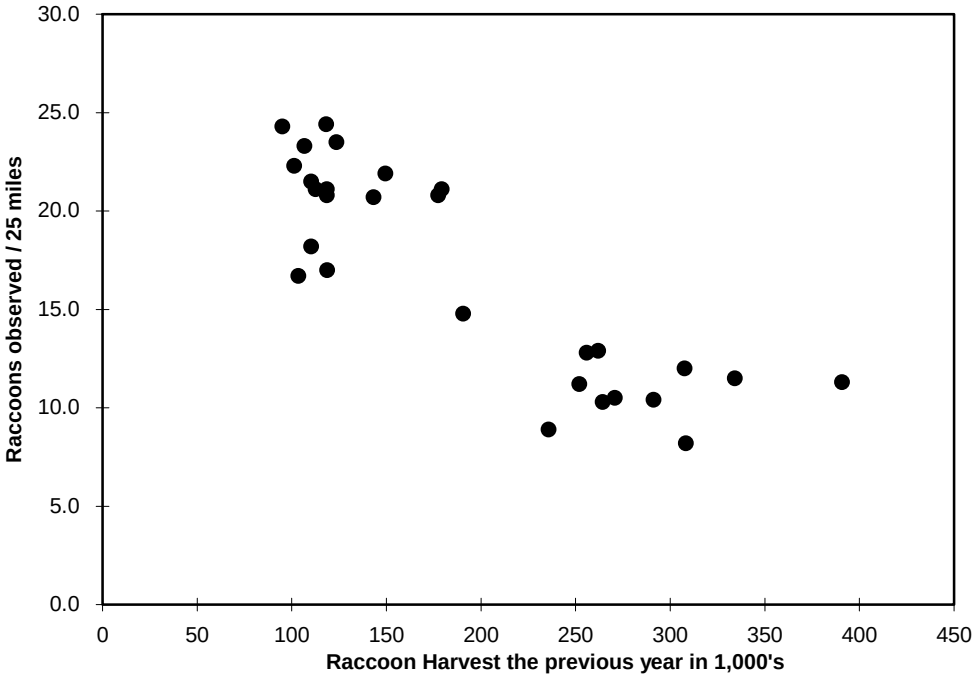


Figure 3.3 Pelt price fluctuations of important Iowa furbearers.

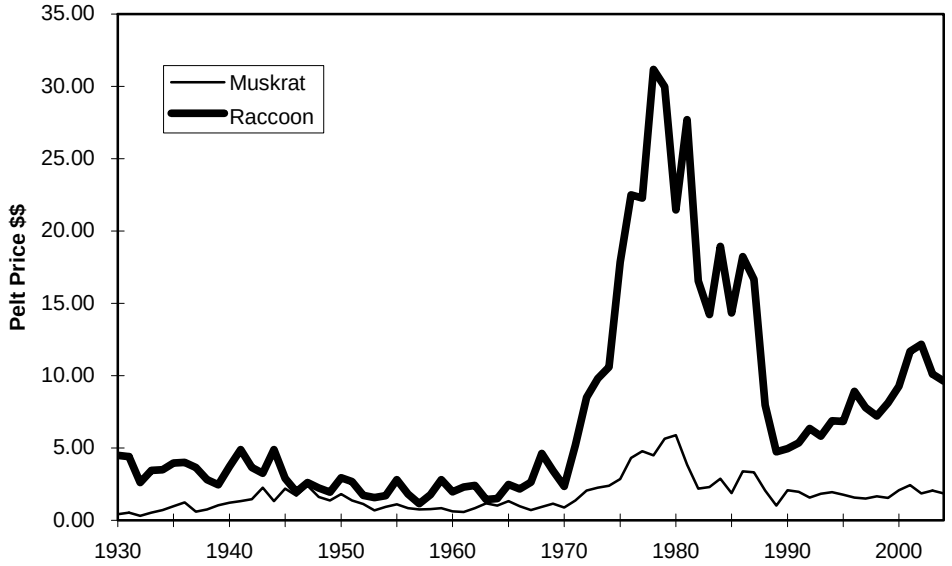
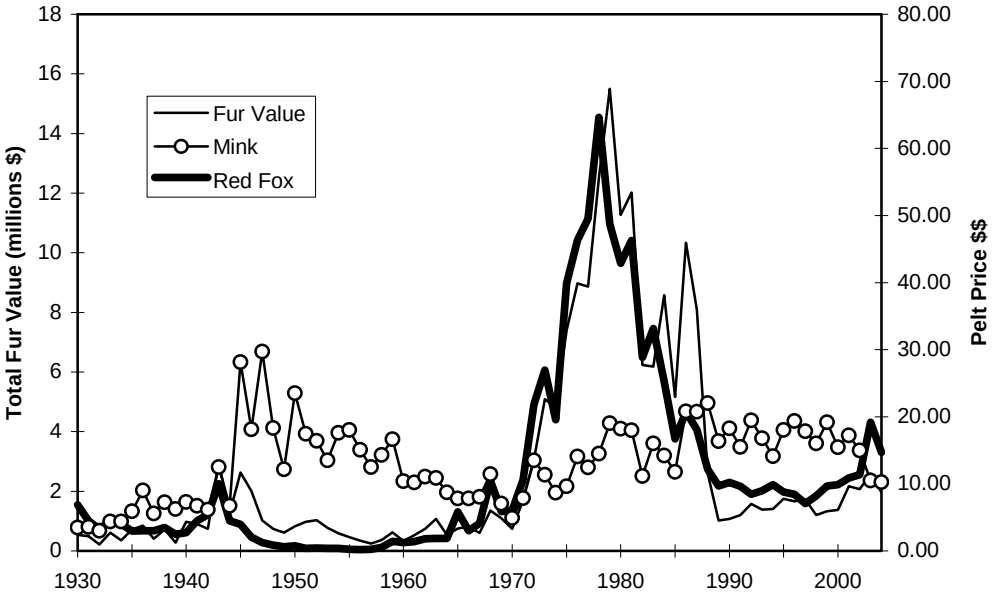


Figure 3.4 Pelt price fluctuations of mink and fox, and the value of Iowa furs.



WATERFOWL

Duck Breeding Populations

Breeding population estimates are made each year for 10 key species of ducks in the principal breeding areas of Alaska, Canada, and the northcentral United States (Table 4.1, Fig. 4.1). Surveys are conducted in May and early June by U.S. Fish and Wildlife Service (USFWS), Canadian Wildlife Service, provincial and state conservation agency personnel. Ducks are counted from fixed-wing aircraft on the same transects each year. Estimates of ducks and ponds seen from the air are corrected for visibility bias by conducting ground counts on a sample of the transects. The estimates in Table 4.1 are not the entire continental breeding populations of these ducks; a portion of each population (an estimated 20% for mallards) nests outside the surveyed areas.

Although numbers of breeding ducks have fluctuated substantially from year to year, trend analysis suggests that total duck numbers are stable. This stable trend, however, is the result of increasing numbers of some species (e.g., gadwall, green-winged teal, shovelers and blue-winged teal) and decreasing numbers of others (e.g., pintails and scaup). There is also a slight decreasing trend in numbers of breeding mallards, but this trend is less pronounced due to the large numbers of breeding mallards seen in the late 1990's. Despite the improvements in duck numbers in the 1990's, there are still concerns about the long-term loss of both wetland and upland habitat in the prairie pothole region and the long-term outlook for duck populations in the future.

Duck populations have fluctuated substantially over time. The drought of the 1980's pushed many populations to near record low levels. The resiliency and adaptability of these birds, however, was dramatically illustrated when most duck populations rebounded after water returned to the prairies in the 1990's. Pintails and scaup were exceptions to this rule; pintails because drought continued to plague their primary nesting areas in Alberta and scaup for reasons related to nutritional deficiencies on migration areas. Duck populations will continue to fluctuate in the future as the numbers of wetlands on the landscape in north-central North America rise and fall with the vagaries of the weather

Giant Canada Goose Population

Giant Canada geese nested throughout Iowa prior to Euro-American settlement, but were extirpated from most of the Midwest, including Iowa, by 1900. The giant Canada goose restoration program initiated by the IDNR in 1964 has succeeded in restoring this species to much of its former nesting range in Iowa (see Giant Canada Goose Restoration). The giant Canada goose population in Iowa has exhibited steady growth for the past 30 years (Fig. 4.2). Each summer, biologists and technicians estimate the numbers of adult Canada geese and young produced within their wildlife units. To obtain a statistically valid estimate of this population, an aerial survey is also periodically conducted. The results of the aerial survey in 2000 and 2001 indicated that the spring population was just about 55,000. The results of the aerial survey conducted in 2005 indicated that the population was about 91,000. Prior to 2005, the population estimates made by wildlife biologists were very similar to the population estimates obtained from the aerial surveys. This suggests that the biologists' estimates accurately represented the growth rate and size of this population for most of the 20th century.

Waterfowl Harvests

Waterfowl harvests and hunter activity in Iowa are estimated annually by the USFWS (Table 4.2). Harvest estimates are calculated by combining the results of 2 surveys: 1) a survey of randomly selected hunters from the Harvest Information Program (HIP) to estimate total waterfowl killed, and 2) a survey that solicits duck wings and goose tails to determine the species composition of the harvest.

Iowa's duck harvests have fluctuated substantially since 1961. The lowest harvests of all ducks and mallards occurred in the early 1960's, years of low duck populations and restrictive regulations. The highest duck harvest was in 1979, a year with good duck numbers and, perhaps more importantly, excellent habitat conditions in Iowa due to above normal rainfall in August and September. Duck harvests began to decline in 1985, bottoming out in 1988 and 1989. Reasons for reduced harvests included smaller fall flights, shorter seasons, reduced bag limits, fewer hunters and poor local habitat conditions. Duck harvests have increased in recent years as a result of improvements in duck numbers, liberal hunting regulations and increases in numbers of active hunters.

Iowa's Canada goose harvest was relatively constant during 1967-85, but began to increase in 1986 as a result of the increased growth of Iowa's giant Canada goose population (Table 4.2). Canada goose harvests increased substantially after 1988, but were dampened in 1993 when restrictive Canada goose hunting regulations were implemented to reduce the harvest of Eastern Prairie Population (EPP) Canada geese. EPP geese nest on the west coast of Hudson Bay and are one of the two principle migrant Canada goose populations that fly through Iowa (the others are small Canada geese commonly called "hutchies" that nest on Baffin Island in the Arctic). The combination of restrictive hunting regulations, receding floodwaters, and large-scale participation in the Farm Service Agency's 0/92 program, resulted in a substantial decrease in Iowa's Canada goose harvest in 1993. Canada goose harvests began increasing in the mid 1990's, peaking at 67,100 in 2002 and 70,300 in 2004. In 1996, a special 2-day September Canada goose season was implemented in north-central and northwest Iowa. During 1996-2000, the Canada goose harvest ranged from 6,300 to 16,700 during this special 2-day hunt.

The snow goose harvest in Iowa has declined since the early 1970's, despite record high numbers of light geese in the Flyway in the 1990's. Declining harvests resulted from shifting snow goose migration patterns, increased use of refuges, and large numbers of older geese in the population. By the mid 1990's, the mid-continent light goose population was severely damaging Arctic breeding habitats. To increase harvests of light geese, more liberal hunting regulations were implemented (liberal bag limits, 107-day seasons) and a conservation order was implemented to permit taking light geese after March 10. The harvest during the conservation order period in Iowa has ranged from 12,000 to 32,000 during 1999-2005. During the 1998-2004 regular light goose seasons, the harvest ranged from 600 to 15,000.

Waterfowl Seasons

Iowa waterfowlers have experienced a wide range of duck and goose seasons since the USFWS began regulating waterfowl hunting in 1918 (Tables 4.3 and 4.4). Nearly every conceivable season-date combination has been tried in the past 80+ years. Duck hunting regulations are inherently complex because they involve many species. The general lack of consistency in regulations, however, both at the federal and state levels,

has made interpretation of their effects on duck harvests very difficult. Goose hunting regulations, on the other hand, have been less complex and more consistent. The relative secure goose breeding habitat, along with consistently conservative seasons and bag limits, have enabled goose populations to generally prosper. The growing giant Canada goose population, however, has complicated traditional Canada goose harvest management. It is particularly challenging to develop hunting regulations that will increase harvests of local giant Canada geese while, at the same time, limit harvests of migrant geese from Arctic and sub-Arctic regions.

Waterfowl Banding

Ducks and geese are captured and banded with leg bands to obtain information on survival rates, hunting mortality, migration patterns and timing, and relationships of harvest areas to production areas. Banding of some species is at the request of the USFWS, while others are banded for in-state programs. Both state and federal personnel band ducks in Iowa, but IDNR personnel band all the Canada geese and more than 90% of the wood ducks (Table 4.5). The USFWS, in concert with the Mississippi Flyway Council, determines banding priorities. In the 1960's emphasis was placed on banding blue-winged teal to evaluate special teal seasons. Winter mallard banding was conducted in the 1970's to supplement breeding grounds bandings and examine hen mortality during spring and summer. Wood duck bandings have been used to evaluate Iowa's September duck seasons. Wood duck banding is also important to measure the effects of hunting on wood duck populations, a necessity because direct counts are not feasible for wood ducks. The IDNR has consistently cooperated with USFWS and Mississippi Flyway Council banding programs and has one of the top wood duck banding programs in the nation, having banded over 10% of all the wood ducks banded in N. Am. in the last 10 years.

Canada goose banding has increased with the growth of our local giant Canada goose population. Migrant Canada geese have also been banded as part of cooperative projects with other states and provinces. Canada goose banding will be increasingly important as states and the USFWS attempt to assess the impacts of special harvest regulations on giant and migrant Canada goose populations.

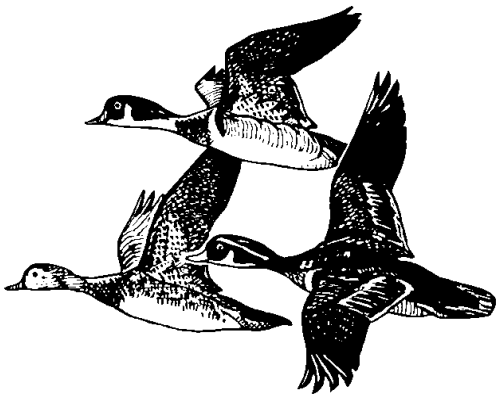


Table 4.1 Breeding population estimates for 10 species of ducks (in thousands). Source: USFWS.

YEAR	MALLARD	GAD-WALL	AMERICAN WIGEON	GREEN-WINGED TEAL	BLUE-WINGED TEAL	NORTHERN SHOVELER	NORTHERN PINTAIL	RED-HEAD	CANVAS-BACK	SCAUP
1971	9,306	1,603	3,281	1,881	4,607	2,005	5,874	534	444	5,063
1972	9,255	1,621	3,172	1,895	4,277	2,441	7,018	551	426	7,932
1973	8,060	1,247	2,864	1,936	3,334	1,624	4,351	498	617	6,222
1974	6,681	1,592	2,665	1,840	4,968	2,006	6,583	627	504	5,720
1975	7,494	1,641	2,692	1,667	5,829	1,962	5,878	829	591	6,427
1976	7,894	1,245	2,476	1,536	4,747	1,756	5,475	668	610	5,779
1977	7,396	1,312	2,560	1,291	4,589	1,475	3,935	637	667	6,247
1978	7,353	1,561	3,286	2,194	4,471	1,978	5,106	738	369	5,936
1979	7,816	1,751	3,087	2,019	4,861	2,386	5,382	695	573	7,540
1980	7,570	1,391	3,558	1,994	4,884	1,902	4,514	753	727	6,314
1981	6,367	1,402	2,924	1,851	3,726	2,325	3,472	596	610	5,918
1982	6,254	1,637	2,440	1,543	3,657	2,141	3,709	617	510	5,468
1983	6,313	1,517	2,606	1,836	3,366	1,870	3,506	709	523	7,136
1984	5,247	1,532	2,987	1,361	3,956	1,620	2,969	673	520	6,909
1985	4,754	1,304	2,040	1,435	3,459	1,697	2,511	579	373	5,038
1986	6,836	1,540	1,732	1,682	4,463	2,118	2,737	560	437	5,204
1987	5,613	1,311	1,982	2,003	3,518	1,951	2,629	502	451	4,837
1988	6,331	1,349	2,194	2,058	3,975	1,680	2,011	441	436	4,684
1989	5,650	1,416	1,974	1,843	3,128	1,540	2,113	511	478	4,344
1990	5,452	1,672	1,860	1,790	2,776	1,759	2,257	481	539	4,294
1991	5,444	1,584	2,254	1,558	3,764	1,716	1,803	446	491	5,255
1992	5,976	2,033	2,208	1,773	4,333	1,954	2,098	596	482	4,639
1993	5,708	1,755	2,053	1,695	3,193	2,047	2,053	485	472	4,080
1994	6,980	2,318	2,382	2,108	4,616	2,912	2,972	654	526	4,529
1995	8,269	2,836	2,615	2,301	5,140	2,855	2,758	889	771	4,446
1996	7,941	2,984	2,273	2,459	6,416	3,449	2,736	834	849	4,250
1997	9,940	3,897	3,118	2,507	6,124	4,120	3,558	918	689	4,112
1998	9,640	3,742	2,858	2,087	6,399	3,183	2,521	1,005	686	3,472
1999	10,806	3,236	2,920	2,631	7,150	3,890	3,058	973	716	4,412
2000	9,470	3,158	2,733	3,194	7,431	3,521	2,908	926	707	4,026
2001	7,904	2,679	2,494	2,509	5,757	3,314	3,296	712	580	3,694
2002	7,504	2,235	2,334	2,334	4,207	2,138	1,790	565	487	3,524
2003	7,950	2,549	2,551	2,679	5,518	3,620	2,558	637	558	3,734
2004	7,425	2,590	1,981	2,461	4,073	2,810	2,185	605	617	3,807
2005	6,755	2,179	2,225	2,157	4,586	3,592	2,561	592	521	3,387
Percent Change in 2005 from:										
2004	-9%	-16%	12%	-12%	13%	28%	17%	-2%	-16%	-11%
1955-04 Av	-9%	30%	-14%	17%	2%	70%	-37%	-5%	-7%	-35%
1955-05 Statistics										
Average	7,410	1,688	2,587	1,849	4,483	2,147	4,038	625	559	5,151
Maximum	10,994	3,897	3,703	3,194	7,431	4,120	9,897	1,005	849	7,932
Minimum	4,754	454	1,706	700	2,776	1,183	1,790	319	354	3,387

Table 4.2 Selected waterfowl harvest and hunter activity estimates for Iowa. Source is USFWS.
Data for 2001-04 is based on the Harvest Information Program and is preliminary.

	DAYS AND HARVEST (1,000's)								FEDERAL	AVE.	ACTIVE
YEAR	MALLARD	WOOD DUCK	B-W TEAL	G-W TEAL	ALL DUCKS	CANADA GEESE	SNOW GEESE	DAYS HUNTED	DUCK STAMPS	SEASON BAG	ADULT HUNTERS
1971	160.9	59.3	49.6	26.6	376.2	10.4	46.1	536.5	68,401	6.3	58,700
1972	171.8	39.3	31.2	23.9	344.5	5.0	39.3	513.8	57,907	6.4	50,800
1973	99.9	31.0	18.5	18.1	211.9	11.6	32.5	401.1	57,196	3.9	48,700
1974	106.1	46.7	26.0	24.0	238.0	7.7	45.1	450.6	60,446	4.3	51,600
1975	117.4	57.5	51.0	38.6	313.6	13.5	41.2	446.1	58,791	5.9	49,700
1976	87.5	44.0	33.0	27.5	242.2	9.3	15.8	359.6	55,449	5.0	45,400
1977	138.7	37.9	17.0	38.7	280.0	7.8	29.1	407.3	57,143	5.3	46,200
1978	125.6	73.6	41.1	41.7	351.4	11.9	23.9	424.9	56,259	6.7	47,800
1979	183.3	77.8	69.2	38.0	441.0	10.0	43.2	496.7	49,845	9.5	44,400
1980	118.1	49.1	39.0	37.3	299.9	11.7	23.1	384.6	47,008	6.6	41,100
1981	130.2	54.3	34.6	27.7	301.1	10.2	23.1	371.5	41,648	7.9	35,900
1982	164.9	55.3	58.2	24.3	348.8	10.2	14.0	354.9	40,599	9.6	34,400
1983	115.2	47.3	74.0	27.8	324.2	11.5	16.5	310.4	40,381	8.5	34,000
1984	96.3	46.3	56.8	36.2	299.5	13.3	22.0	300.3	41,078	7.5	35,300
1985	62.0	37.4	41.5	22.6	199.8	10.4	8.5	241.4	33,304	6.8	27,900
1986	88.9	46.0	26.9	18.3	217.0	17.2	11.8	244.0	33,504	7.3	27,900
1987	64.8	36.1	14.2	20.1	161.1	15.1	3.6	207.0	30,248	6.0	25,500
1988	41.6	11.4	1.4	12.5	78.3	12.1	10.1	131.8	22,008	4.3	17,300
1989	32.2	17.0	2.9	17.9	87.8	20.2	4.4	127.5	21,686	4.7	16,600
1990	41.3	25.6	4.6	17.8	105.8	26.6	3.1	159.3	24,686	4.9	20,800
1991	63.1	39.4	6.6	13.3	154.2	29.3	8.1	196.7	24,989	6.8	21,400
1992	64.9	18.8	2.9	14.3	122.8	28.7	4.1	198.6	26,744	5.1	22,800
1993	52.7	22.2	4.1	7.9	100.9	17.3	9.5	176.5	25,640	4.7	21,092
1994	49.1	34.9	17.5	22.5	151.8	26.1	2.4	232.6	29,206	6.0	24,523
1995	86.1	49.2	38.9	23.7	242.3	48.0	4.6	280.2	30,282	8.2	25,792
1996	90.6	42.5	36.2	31.0	244.7	59.5	5.4	284.2	30,945	7.9	26,338
1997	71.2	52.1	54.5	32.7	272.0	52.2	15.2	338.3	36,062	8.3	30,737
1998	99.6	36.0	47.7	41.9	281.9	33.2	15.6	292.8	30,864	9.9	27,454
1999	55.9	35.8	41.9	17.4	176.7	33.0	12.5	271.9	32,419	7.2	27,024
2000	74.2	39.9	25.3	25.4	209.6	61.0	0.6	288.4	30,951	8.2	26,693
2001	117.2	45.5	49.3	29.7	296.4	58.1	5.2	203.5	32,090	11.9	25,000
2002	97.2	44.5	50.6	43.0	287.2	67.1	1.1	185.7	30,806	12.3	23,300
2003	101.7	38.6	30.1	29.4	248.9	55.5	14.4	187.1	Not avail.	11.0	22,500
2004	54.7	52.9	28.5	16.8	184.5	70.3	1.0	203.0	Not avail.	9.0	20,400
Percent Change in 2004 From:											
2003	-44%	19%	-44%	-61%	-36%	5%	-9%	9%		-27%	-12%
1961-03 Av.	-41%	42%	-12%	-35%	-19%	242%	-94%	-34%		38%	-41%
1961-04 Statistics											
Average	92.0	37.7	32.1	25.9	227.8	22.5	17.5	301.3	40,743	6.7	33,742
Maximum	183.3	77.8	74.0	45.2	441.0	70.3	48.3	536.5	68,401	12.3	58,700
Minimum	21.3	6.8	0.4	5.6	45.1	4.3	0.6	127.5	21,686	2.1	16,600

Table 4.3 Iowa's duck and coot seasons.

YEAR	SEASON LENGTH	SEASON DATES		SHOOTING HOURS	LIMITS DUCK BAG/POSS	LIMITS COOT BAG/POSS	
1991	30	Oct 5 - 6	Oct 19 - 25	1/2 SR to SS	3 / 6 *ae	15 /30	
		Oct 19 - Nov 16	Nov 9 - Dec 1				
1992	30	Oct 10 - 13	Oct 24 - 30	1/2 SR to SS	3 / 6 *ae	15 /30	
		Oct 24 - Nov 18	Nov 7 - 29				
1993	30	Oct 2 - 4	Oct 23 - 29	1/2 SR to SS	3 / 6 *ae	15 /30	
		Oct 23 - Nov 18	Nov 6 - 28				
1994	40	Sept 17 - 19	Oct 1 - 3	1/2 SR to SS	3 / 6 *af	15 /30	*af) Only 2 Ma (1 Hn), 2 Wd, 1 Pt, 1 Rh,1 Bd, 1 Cb.
		Oct 15 - Nov 20	Oct 22 - Nov 27				5 merg., only 1 Hm.
1995	50	Sept 23 - 27	Sept 23 - 25	1/2 SR to SS	5 /10 *ag	15 /30	*ag) Only 4 Ma (1 Hn), 2 Wd, 1 Pt, 1 Rh,1 Bd, 1 Cb.
		Oct 15 - Nov 28	Oct 21 - Dec 6				5 merg., only 1 Hm.
1996	50	Sept 21 - 25	Sept 21 - 23	1/2 SR to SS	5 /10 *ah	15 /30	*ah) Only 4 Ma (1 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb.
		Oct 19 - Dec 2	Oct 19 - Dec 4				5 merg., only 1 Hm.
	Youth Day	Oct 5	Oct 5	1/2 SR to SS	5 /10 *ah		
1997	60	Sept 20 - 24	Sept 20 - 24	1/2 SR to SS	6 /12 *ai	15 /30	*ai) Only 4 Ma (2 Hn), 2 Wd, 3 Pt, 2 Rh,1 Bd, 1 Cb.
		Oct 11 - Dec 4	Oct 18 - Dec 11				5 merg., only 1 Hm.
	Youth Day	Sept 27	Sept 27	1/2 SR to SS	6 /12 *ai	15 /30	
1998	60	Sept 19 - 23	Sept 19 - 23	1/2 SR to SS	6 /12 *aj	15 /30	*aj) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb.
(*HIP)		Oct 10 - Dec 3	Oct 17 - Dec 10				5 merg., only 1 Hm.
	Youth Day	Sept 26	Sept 26	1/2 SR to SS	6 /12 *aj	15 /30	
1999	60	Sept 18 - 22	Sept 18 - 22	1/2 SR to SS	6 /12 *ak	15 /30	*ak) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb
		Oct 16 - Dec 9	Oct 16 - Dec 9				& 3 Sc. 5 merg., only 1 Hm.
	Youth Day	Oct 9	Oct 9	1/2 SR to SS	6 /12 *ak	15 /30	
2000	60	Sept 23 - 27	Sept 23 - 27	1/2 SR to SS	6 /12 *ak	15 /30	
		Oct 14 - Dec 7	Oct 14 - Dec 7				
	Youth Day	Oct 7 - 8	Oct 7 - 8	1/2 SR to SS	6 /12 *ak	15 /30	
2001	60	Sept 22 - 26	Sept 22 - 26	1/2 SR to SS	6 /12 *ak	15 /30	
		Oct 13 - Dec 6	Oct 13 - Dec 6				
	Canvasback	Oct. 27 - Nov 15	Nov 17 - Dec 6				
	Youth Day	Oct 6 - 7	Oct 6 - 7	1/2 SR to SS	6 /12 *ak	15 /30	
2002	60	Sept 21 - 25	Sept 21 - 23	1/2 SR to SS	6 /12 *al	15 /30	*al) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd,
		Oct 12 - Dec 5	Oct 19 - Dec 14				& 3 Sc. 5 merg., only 1 Hm. Closed sea. on Cb
	Pintail	Sept 21 - 25	Sept 21 - 23				
		Oct 12 - Nov 5	Oct 19 - Nov 14				
	Youth Day	Oct 5 - 6	Oct 5 - 6	1/2 SR to SS	6 /12 *al	15 /30	
2003	60	Sept 20 - 24	Sept 20 - 22	1/2 SR to SS	6 /12 *ak	15 /30	*ak) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb
		Oct 11 - Dec 4	Oct 18 - Dec 13				& 3 Sc. 5 merg., only 1 Hm.
	Pintail	Sept 20 - 24	Sept 20 - 22				
		Oct 11 - Nov 4	Oct 18 - Nov 13				
	Canvasback	Oct 18 - Nov 16	Oct 25 - Nov 23				
	Youth Day	Oct 4 - 5	Oct 4 - 5	1/2 SR to SS	6 /12 *ak	15 /30	
2004	60	Sept 18 - 22	Sept 25 - 26	1/2 SR to SS	6 /12 *ak	15 /30	*ak) Only 4 Ma (2 Hn), 2 Wd, 1 Pt, 2 Rh,1 Bd, 1 Cb
		Oct 16 - Dec 9	Oct 16 - Dec 12				& 3 Sc. 5 merg., only 1 Hm.
	Pintail	Sept 18 - 22	Sept 25 - 26				
		Oct 16 - Nov 9	Oct 16 - Nov 12				
	Canvasback	Oct 23 - Nov 21	Oct 23 - Nov 21				
	Youth Day	Oct 2 - 3	Oct 9 - 10	1/2 SR to SS	6 /12 *ak	15 /30	

DUCK SPECIES: Ma = Mallard, Wd = Wood duck, Bd = Black duck, Cb = Canvasback, Rh = Redhead, Ru = Ruddy duck, Bu = Bufflehead,
Pt = Pintail, Wg = Wigeon, Sc = Scaup, Rn = Ring-necked duck Bt = Blue-winged teal, Gt = Green-winged teal,
Ga = Gadwall, Sh = Shoveler, Ct = Cinnamon teal, Md = Mottled duck, (Hn = Hen, Dr = Drake)
Cm = Common merganser, Rm = Red-breasted merganser, Hm = Hooded merganser

SHOOTING HOURS: SR to SS = sunrise to sunset, 1/2 SR to SS = 1/2 hour before sunrise to sunset, 1/2 SR to 1/2 SS = 1/2 hour before sunrise to 1/2 hour before sunset, 1/2 SR to 1 SS = 1/2 hour before sunrise to 1 hour before sunset.
Shooting hours began at 12:00 noon on opening day for hunting seasons 1931-33, 1947-54, & 1959-63.
Iowa set daily shooting hours at sunrise or later during 27 of the 72 hunting seasons between 1918-89.
Federal regulations set daily shooting hours at sunrise or later during 16 of the 72 hunting seasons between 1918-89.

LIMIT: BAG = Daily bag limit, POSS = Possession limit

POSS LIMIT = Twice the daily bag limit unless otherwise noted.

PS = Point System used to determine bag limit; daily bag obtained when the point value of the last duck taken, added to the point values of the previous ducks bagged, reaches or exceeds 100 points.

SPEC. REGULATIONS: Wood duck season closed by Fed. regulation from 1918 through the 1940 season.
Canvasback and redhead season were closed on the Mississippi River from 1975 thru 1979.
Canvasback season was closed on the Mississippi River in 1980-82.
Canvasback season closed on Pools 9 & 19 on the Mississippi River from 1983-85.
Canvasback season closed statewide 1936-37, 1960-63, 1972, 1986-93.

DUCK ZONE BOUNDARY (1) = a line running from the Nebraska-Iowa border along I-80 to the Iowa-Illinois border.

DUCK ZONE BOUNDARY (2) = a line running from the Nebraska-Iowa border along State Hwy 175, east to State Hwy 37, southeast to U.S. Hwy 59, south to I-80 and along I-80 to the Iowa-Illinois border.

(*SH) Steel shot required statewide for hunting all migratory gamebirds except woodcock.

STEEL SHOT REGULATIONS HISTORY:

In 1977, no person could hunt waterfowl on all waters and a 150 yard zone thereto in Fremont and Mills Counties while possessing 12 gauge shotshells loaded with any shot other than steel. Drainage ditches, temporary sheet water and the Missouri River were exempt.

During 1978 & 1979, no person could hunt waterfowl on all waters and a 150 yard zone thereto in Fremont and Mills Counties and on the Upper Mississippi Wildlife Refuge while possessing 12 gauge shotshells loaded with any shot other than steel. Drainage ditches, temporary sheet water, and the Missouri River in Mills and Fremont Counties were exempt.

In 1980, Sweet Marsh in Bremer County, Big Marsh in Butler County, and the Princeton Area in Scott County, were added to the areas previously described in the steel shot regulations and the rule now applied to all shotgun gauges.

In 1981, Green Island in Jackson County was added to the list of areas previously described where steel shot was required.

During the 1982 through 1984 seasons, the previously described list of areas for steel shot remained the same.

During the 1985 & 1986 seasons, no person could hunt migratory game birds except woodcock on any lands or waters under the jurisdiction of the State Conservation Commission, the U.S. Government, or any county conservation board, or on all waters and a 150 yard zone adjacent to these waters, including reservoirs, lakes, ponds, marshes, bayous, swamps, rivers, streams, and seasonally flooded areas of all types, while possessing shotshells loaded with shot other than steel shot. Temporary sheet water, farm ponds less than 2 acres in size, and streams with water less than 25 feet in width where the hunting was occuring were exempt. In addition, no person could hunt waterfowl in the zone bounded on the west by the Missouri River, on the south by I-680, on the east by I-29 and on the north by the Soldier River, while possessing any shotshells loaded with shot other than steel shot.

From 1987 to the present, no person could hunt migratory game birds except woodcock on all lands and waters within the State of Iowa while possessing any shotshell loaded with shot other than steel shot, or copper or nickle coated steel shot.

In 1998, nontoxic shot was required for any shotgun shooting (except turkey hunting) on most DNR managed wildlife areas in Iowa's prairie pothole region that had waterfowl production potential.

(*HIP) First year migratory bird hunters in Iowa registered (by phone) for the federal Harvest Information Program (HIP).

Table 4.4 Iowa's goose seasons.

YEAR	GOOSE SPECIES	SEASON LENGTH	SEASON DATES		SHOOTING HOURS	LIMIT BAG/POSS	COMMENTS
			NORTH ZONE	SOUTH ZONE			
1996	Ca	2	Sep 14 - 15	None	1/2 SR to SS	2 / 4 *l	*l) Bag lim.= 2 Ca.
	Ca/Wf/Br	70	Sep 28 - Dec 6	Oct 5 - Oct 13	1/2 SR to SS	2 / 4 *m	*m) Bag lim.= 2 Ca , 2 Wf, & 2 Br .
				Oct 19 - Dec 18			Pos lim.= 4 Ca, 4 Wf, & 4 Br.
	Sn	107	Oct 12 - Jan 10, 1997		1/2 SR to SS	10 /30	
			Feb 22 - Mar 9, 1997				
1997	Ca	2	Sep 13 - 14	None	1/2 SR to SS	2 / 4 *l	
	Ca/Wf/Br	70	Oct 4 - Dec 12	Oct 4 - Oct 12	1/2 SR to SS	2 / 4 *m	
				Oct 18 - Dec 17			
	Sn/Ro	107	Oct 4 - Dec 31		1/2 SR to SS	10 /30	
			Feb 21 - Mar 10, 1998				
1998	Ca	2	Sep 12 - 13	None	1/2 SR to SS	2 / 4 *l	
(*HIP)	Ca/Wf/Br	70	Oct 3 - Dec 11	Oct 3 - Oct 11	1/2 SR to SS	[a] 2 / 4 *m	
				Oct 17 - Dec 16			
	Sn/Ro	107	Oct 3 - Dec 31		1/2 SR to SS	20 /none	
			Feb 20 - Mar 10, 1999				
	Sn/Ro	[b] Cons. Or.	March 11-April 16, 1999		1/2 SR to SS1/2	20 /none	
1999	Ca	2	Sep 11 - 12	None	1/2 SR to SS	2 / 4 *l	
	Ca/Wf/Br	70	Oct 2 - Dec 10	Oct 2 - Oct 10	1/2 SR to SS	2 / 4 *m	
				Oct 16 - Dec 15			
	Sn/Ro	107	Oct 2 - Dec 26		1/2 SR to SS	20 /none	
			Feb 19 - Mar 10, 2000				
	Sn/Ro	[b] Cons. Or.	March 11-April 16, 2000		1/2 SR to SS 1/2	20 /none	
2000	Ca	2	Sep 9 - 10	None	1/2 SR to SS	2 / 4 *l	
	Ca/Wf/Br	70	Sep 30 - Dec 8	Sep 30 - Oct 15	1/2 SR to SS	2 / 4 *m	
				Nov 4 - Dec 27			
	Sn/Ro	107	Sep 30 - Jan 14, 2001		1/2 SR to SS	20 /none	
	Sn/Ro	[b] Cons. Or.	Feb 15 - April 15, 2001		1/2 SR to SS 1/2	20 /none	
2001	Ca/Wf/Br	70	Sep 29 - Dec 7	Sep 29 - Oct 21	1/2 SR to SS	2 / 4 *m	
				Nov 10 - Dec 26			
	Sn/Ro	107	Sep 29 - Jan 13, 2002		1/2 SR to SS	20 /none	
	Sn/Ro	[b] Cons. Or.	Feb 2 - April 15, 2002		1/2 SR to SS 1/2	20 /none	
2002	Ca/Wf/Br	70	Sep 28 - Dec 6	Sep 28 - Oct 20	1/2 SR to SS	2 / 4 *m	
				Nov 9 - Dec 25			
	Sn/Ro	107	Sep 28 - Jan 12, 2003		1/2 SR to SS	20 /none	
	Sn/Ro	[b] Cons. Or.	Feb 1 - April 15, 2003		1/2 SR to SS 1/2	20 /none	
2003	Ca	15	Sep 1 - 15 in metro zones [c]		1/2 SR to SS	3 / 6 *n	*n) Bag lim.= 3 Ca.
	Ca & Br	70	Sep 27 - Dec 5	Sep 27 - Oct 19	1/2 SR to SS	2 / 4 *o	*o) Bag lim.= 2 Ca & 2 Br .
				Nov 8 - Dec 24			Pos lim.= 4 Ca & 4 Br.
	Wf	86	Sept 27 - Dec 21	Sept 27 - Dec 21		2 / 4	
	Sn/Ro	107	Sep 27 - Jan 11, 2004		1/2 SR to SS	20 /none	
	Sn/Ro	[b] Cons. Or.	Jan 12 - April 15, 2004		1/2 SR to SS 1/2	20 /none	
			NORTH ZONE	SOUTH ZONE			
2004	Ca	15	Sep 1 - 15 in metro zones [c]		1/2 SR to SS	3 / 6 *n	*n) Bag lim.= 3 Ca.
	Ca	2	Sep 11-12	None	1/2 SR to SS	2 / 4 *l	
	Ca & Br	60	Sep 25 - Oct 3	Oct 2 - 10	1/2 SR to SS	2 / 4 *o	*o) Bag lim.= 2 Ca & 2 Br .
			Oct 16 - Dec 5	Oct 30 - Dec 19			Pos lim.= 4 Ca & 4 Br.
	Wf	86	Sept 25 - Dec 19	Oct 2 - Dec 26		2 / 4	
	Sn/Ro	107	Sep 25 - Jan 9, 2005		1/2 SR to SS	20 /none	
	Sn/Ro	[b] Cons. Or.	Jan 10 - April 15, 2005		1/2 SR to SS 1/2	20 /none	

GOOSE SPECIES: Ca = Canada goose, Sn = Snow goose, Wf = White-fronted goose, Br = Brant

SHOOTING HOURS: SR to SS = sunrise to sunset, 1/2 SR to SS = 1/2 hour before sunrise to sunset, 1/2 SR to 1/2 SS= 1/2 hour before sunrise to 1/2 hour before sunset, 1/2 SR to 1 SS = 1/2 hour before sunrise to 1 hour before sunset. 1/2 SR to SS/1 = 1/2 hour before sunrise to sunset in all of state except SW Zone where shooting hours were 1/2 hour before sunrise to 1:00 PM until Dec. 1 in 1991 and until Nov. 29 in 1992, then 1/2 hour before sunris to sunset thereafter. 1/2 SR to SS 1/2 = 1/2 hour before sunrise to 1/2 hour after sunset.

LIMIT: BAG = Daily bag limit, POSS = Possesion limit

SW ZONE (1) = that portion of the state south and west of a line running from the Iowa-Missouri state line along US Hwy 71 to state Hwy 92 and west on Hwy 92 to the Nebraska-Iowa border.

SW ZONE (2) = that portion of the state south and west of a line running from the Iowa-Missouri state line along U.S. Hwy 71 to I-80, west on I-80 to U.S. Hwy 59, north on U.S. Hwy 59 to State Hwy 37, then NW on Hwy 37 to State Hwy 175, and west on Hwy 175 to the Nebraska-Iowa border.

NORTH/SOUTH GOOSE ZONE BOUNDARY = a line running from the Nebraska-Iowa border along state Hwy 175, southeast to State Hwy 37, east to U.S. Hwy 59, south to I-80, and along I-80 to the Iowa-Illinois border. This was the same border used to divide the north and south duck zones in 1993.

(*SH) Steel shot required statewide for hunting all migratory gamebirds except woodcock. See Iowa's Duck and Coot Seasons for a complete history of steel shot regulations in Iowa.

(*HIP) First year migratory bird hunters in Iowa registered (by phone) for the federal Harvest Information Program (HIP).

SPECIAL REGULATIONS: Ross's goose season closed by Fed. regulations from 1942-61.

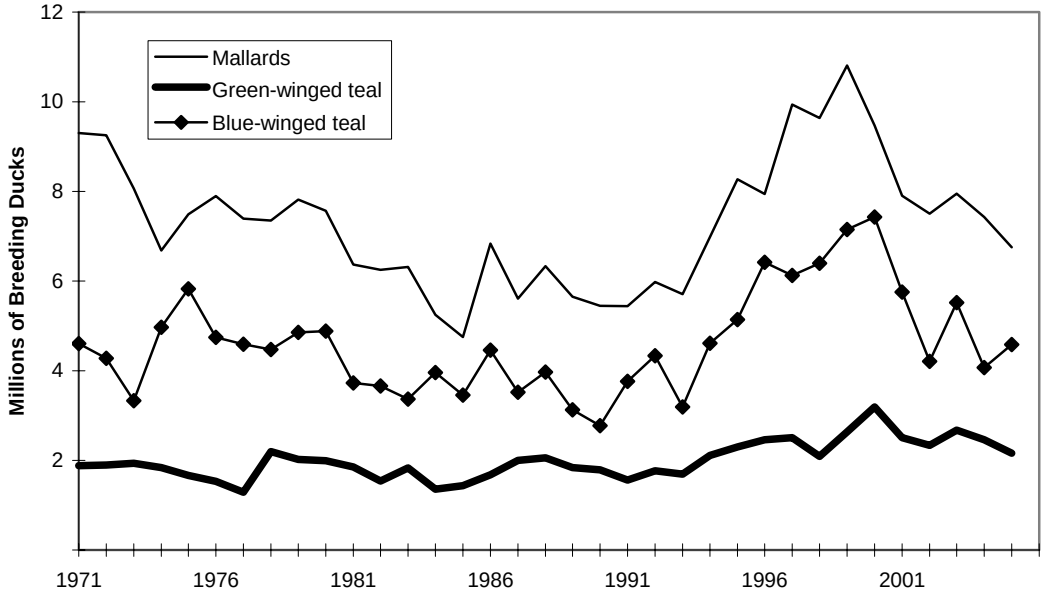
[a] The daily limit was 2 Canada geese through Oct. 31 and 1 thereafter except in the south zone where it was 2 after Nov. 30.

[b] A conservation order was issued by the USFWS to permit the taking of light geese (snow + ross) after March 10. Hunters could use electronic calls and unplugged shotguns and hunt until 1/2 hour after sunset. Hunters had to be fully licensed to hunt waterfowl in Iowa (no Fed. Mig. Bird stamp) and registered with HIP.

Table 4.5 Waterfowl banded in Iowa. (Numbers include both state and federal bandings.)

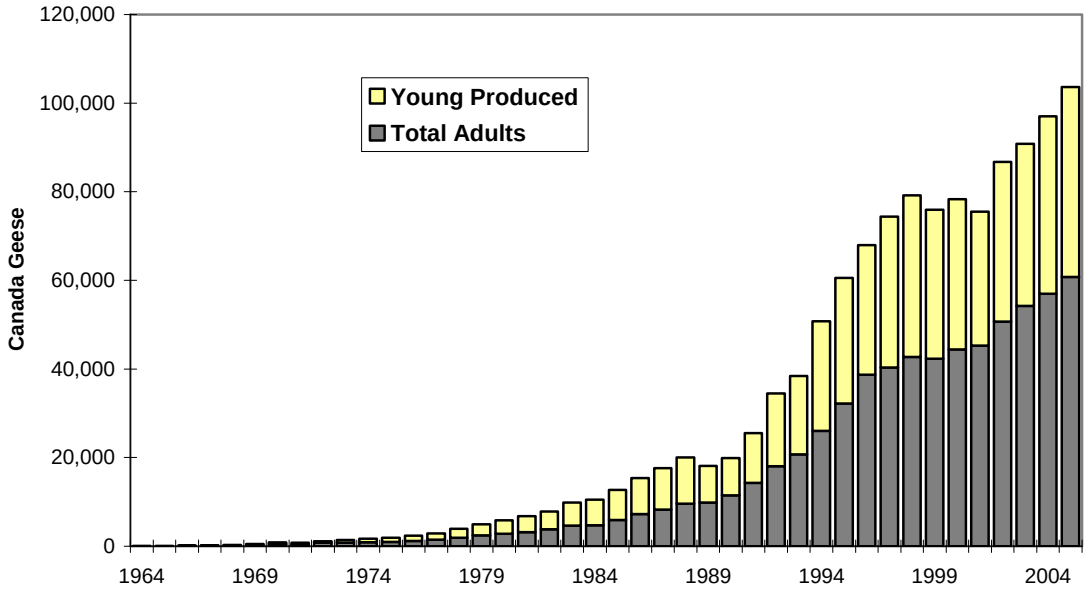
Year	Canada Geese	Mallards	Wood Ducks	Blue-winged Teal	Trumpeter Swans	Other species	Total
1964	51	440	488	6,046		273	7,298
1965	32	533	571	4,485		120	5,741
1966	61	504	564	3,836		172	5,137
1967	66	1,928	410	4,022		113	6,539
1968	91	1,809	315	3,716		63	5,994
1969	53	2,282	414	1,634		135	4,518
1970	143	2,368	935	2,649		236	6,331
1971	301	1,901	1,644	1,395		330	5,571
1972	148	672	1,381	1,000		127	3,328
1973	410	1,022	1,665	601		115	3,813
1974	268	522	1,333	638		34	2,795
1975	222	563	2,026	248		164	3,223
1976	544	3,165	1,620	334		19	5,682
1977	799	678	1,261	223		25	2,986
1978	633	4,418	1,765	1,022		98	7,936
1979	409	4,683	1,490	509		3	7,094
1980	775	2,175	1,302	1,880		85	6,217
1981	736	350	1,523	919		86	3,614
1982	975	99	2,747	26		1	3,848
1983	1,444	446	2,411	35		3	4,339
1984	1,293	110	2,489	38		6	3,936
1985	1,710	389	1,953	30		1	4,083
1986	1,847	383	2,623	18		3	4,874
1987	2,127	380	2,199	98		8	4,812
1988	2,421	349	2,115	37		2	4,924
1989	1,712	70	2,636	0		0	4,418
1990	1,556	13	1,908	64		0	3,541
1991	1,880	151	4,874	0		0	6,905
1992	2,043	392	3,776	0		13	6,224
1993	2,538	130	2,931	0		1	5,600
1994	3,737	146	3,631	0		0	7,614
1995	3,671	221	6,717	0		0	10,609
1996	3,809	263	4,188	0		0	8,260
1997	4,852	77	4,375	0		0	9,304
1998	4,462	292	4,837	0	58	0	9,649
1999	6,073	229	4,669	0	46	0	10,971
2000	2,971	133	2,380	0	90	0	5,574
2001	2,942	60	3,711	0	78	0	6,791
2002	3,479	338	3,146	207	68	0	7,238
2003	4,066	259	4,048	0	87	0	8,460
2004	3,338	143	4,769	0	91	0	8,341

Figure 4.1 Breeding populations of important ducks to Iowa.



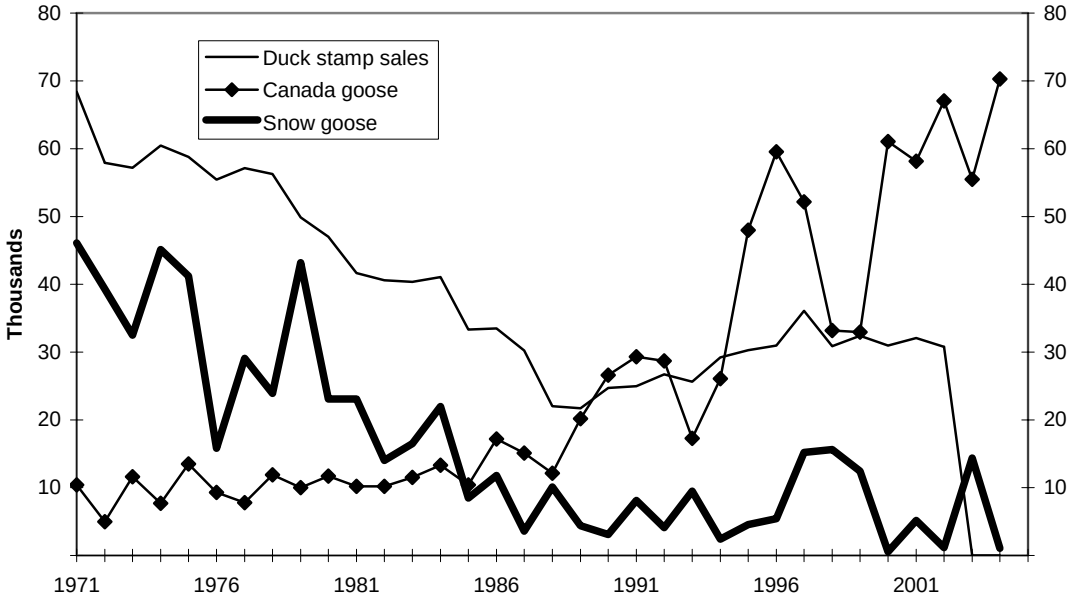
Source: USFWS

Figure 4.2 Iowa's giant Canada goose population.



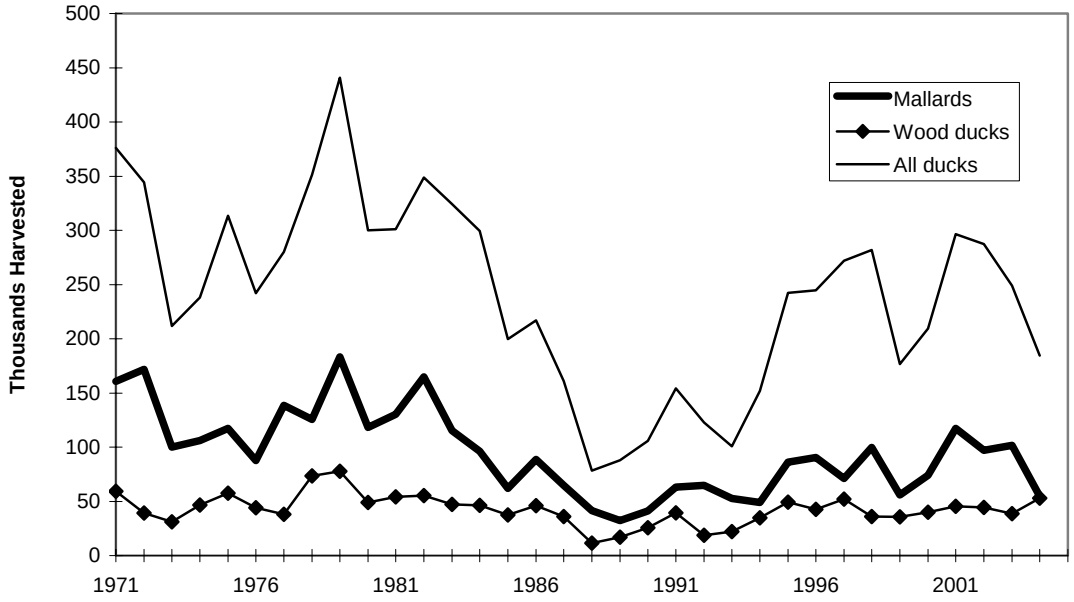
Source: Iowa DNR

Figure 4.3 Goose harvest & duck stamp sales in Iowa (1961 -present).



Source: USFWS

Figure 4.4 Duck harvest in Iowa (1961 - present)



Source: USFWS

UPLAND WILDLIFE

HISTORICAL SUMMARY OF POPULATIONS AND HARVEST

The Iowa Department of Natural Resources (IDNR) conducts 2 statewide surveys to monitor upland game populations in Iowa, the August Roadside survey and the Small Game Harvest survey.

August Roadside Survey is conducted each year by IDNR Enforcement and Wildlife Bureau personnel throughout the state of Iowa during the first half of August. The survey generates data from 210 30-mile routes on ring-necked pheasants, bobwhite quail, gray partridge, cottontail rabbits, and white-tailed jackrabbits. Counts are conducted on sunny, cool mornings with heavy dew. All comparisons are based on total routes run.

The small game harvest survey is a mail survey of Iowa small game hunters conducted following the small game hunting seasons. Each year a random sample of small game hunters (5% of licensed hunters) are send a postcard and survey participants are asked where they hunted, which species they hunted, how many days they hunted, and how many of each species they harvested.

The data from these 2 surveys form the basis for historical information on upland game populations in Iowa and are summarized in the historical text and tables. Both surveys have been conducted annually since 1962. The annual August roadside survey report can be found on the DNR's website at www.iowadnr.com. The results of the annual small game harvest survey can be found at the end of this report.

HISTORICAL SUMMARY OF POPULATIONS AND HARVEST

Ring-necked Pheasant

The ring-necked pheasant now found in Iowa has been classified as (*Phasianus colchicus torquatus*). This name suggests a cross between 2 of the true Asiatic pheasants. One the Rion Caucasian (Black-necked) pheasant (*Phasianus colchicus colchicus*) native to the area between the Black and Caspian Seas and the true Chinese ring-necked pheasant (*Phasianus torquatus torquatus*) found in eastern China and northwestern Indo-China. Pheasant were first introduced into Iowa in September of 1900 or 1901 when a severe windstorm wrecked the pens of a game breeder named William Benton of Cedar Falls releasing approximately 2,000 birds. Benton's birds spread west and north and constitute the foundation stock of Iowa's north-central counties. In 1904 an unsuccessful planting was made in Keokuk county. In 1907 a successful stocking was made in Kossuth county and in 1908 successful stockings were made in O'Brien county. Private individuals made all of these early stockings. It is uncertain just when the state began stocking pheasants. Department records only date back to 1921, but it is certain by 1913 large state stockings were

being made annually. Records show Butler county received 500 state birds in 1913 and 400 in 1915. The first state game farm was authorized in 1913, probably at Spirit Lake, because records show 200 state birds escaped from that game farm in 1915. Between 1915-18 all northeastern Iowa counties received plantings of 200-800 birds, with 1 large stocking of 2,500 at Pilot Knob State Park in Winnebago county. Stockings were usually made on timbered land leased by the state from private individuals. In 1915 the state established 2 more game farms at Clive and Lansing. Both game farms remained in operation until 1931. Between 1913-32 the state released an estimated 100,000 to 150,000 pheasants, both wild trapped and pen-raised birds. Virtually all of the original releases made in the northern half of the state were a success. Widespread abundance was first attained in Winnebago county in 1916, Dickinson in 1917, Floyd by 1919, Humboldt by 1920, Hardin and Hamilton counties by 1924, and Sac by 1927. In 1925, pheasants had become so abundant in Iowa's north-central counties that the state began to trap and gather eggs for southern Iowa. In 1925 farmers collected 60,000 wild eggs and trapped 7,000 birds from Butler and Winnebago counties. Most southern Iowa counties received large stockings in 1905-17, 1924-25, and 1928-30, but all were considered a failure. In 1905, it was generally assumed that southern Iowa had better pheasant habitat than northern Iowa. The existence of this belief is supported by the fact that up until 1913 it was customary to make stockings in timber.

It is interesting to note Iowa's pheasant populations reached their highest abundance in the Des Moines Lobe landform. The early success, 1920-40's, of pheasants in north central Iowa was undoubtedly due to the abundance of grassy habitats (tame and native hay, oats, flax, and prairie pothole wetlands) interspersed with weedy crop fields. Iowa's first pheasant season was held October 20-22, 1925 in Kossuth, Humboldt, Winnebago, Hancock, Wright, Cerro Gordo, Franklin, Mitchell, Floyd, Butler, Grundy, Blackhawk and Bremer counties. The hunting season opened 1/2 hour before sunrise and ended at noon with a bag limit of 3 cocks. It appears the decision to open counties to hunting in these early years was based largely on pheasant crop depredation complaints as annual pheasant censuses, predecessor to the August Roadside Survey, were not begun until 1935. Flush count records show 7 men flushed 850 pheasants in 5 hours in Hancock county in 1931. By 1945 most of northern Iowa was open to hunting and by 1965 all of Iowa, except a few southeastern counties, was open to pheasant hunting. The entire state was opened to hunting in 1976. Historically (1930-50's), the NW, NC, and C regions had Iowa's highest pheasant densities (Fig. 5.1). However, intensified agriculture has led to a decline in pheasant populations since the 1960's (Fig. 5.2). Regionally, the greatest declines have occurred in the NC, C, and SW regions (Fig. 5.7). By the early 1970's southern Iowa had become the states premiere pheasant range.

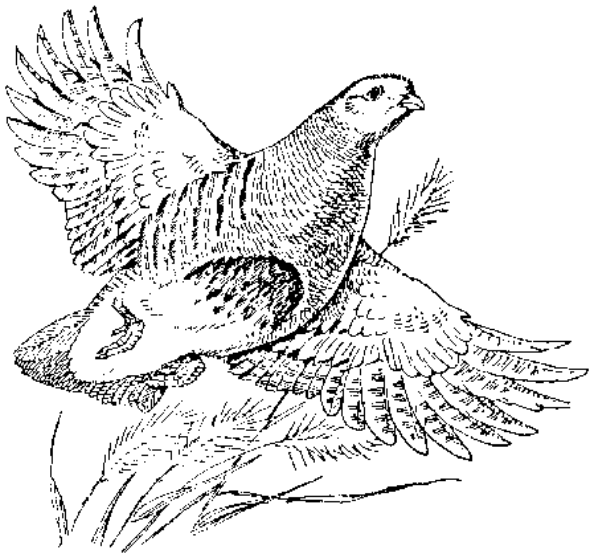
Populations have declined following severe winter weather in 1964-65, 1966-67, 1978-79, 1981-82, and 2000-01 with recoveries occurring in years with milder winters (Table 5.1). While the number of broods sighted/30-mile route has also fluctuated with the severity of the winter (Fig. 5.3), the all-time lows recorded in 1983, 1984, 1993, 1999, and 2001 were the results of very cool and/or wet conditions during spring and early summer (Table 5.2; Fig. 5.3). Observed brood sizes have declined slightly since 1962, with the 2004 estimate of 4.1 chicks/brood the lowest ever

recorded (Table 5.2; Fig. 5.3). Modest recoveries of all survey parameters occurred between 1984 and 1996 with the enrollment and seeding down of 2.2 million acres of row crops in the 10-year federal Conservation Reserve program (CRP). Pheasant populations in historical ranges, northern and central regions, have rebound since the inception of CRP (Fig 5.7). Populations in the southern regions initially responded to CRP the same way northern and central populations did, but recently have declined. Declines in SW and SC regions, in particular, are likely related to persistent wet weather during the nesting season since 1992. The pheasant season opens the last Saturday in October and runs through January 10th, statewide with a bag/possession limit of 3/12 roosters (Table 5.10). Shooting hours are 8 a.m. to 4:30 p.m. Iowa's first youth pheasant season was held during the 1997-98 hunting season. Youth hunting was allowed statewide for resident hunter's 15 years or younger whom a licensed adult accompanied. The youth pheasant season opens the weekend proceeding the regular season. Bag limit is 1 rooster/day with 2 in possession after the first day (Table 5.10).

Bobwhite Quail

Our native bobwhite was probably never very abundant on Iowa's virgin prairie; most populations were likely restricted to the prairie-timber edges of Iowa. Early settlement changed Iowa's landscape forever. However, at least initially these changes proved to be a boom to Iowa's quail population. Between 1860-90 settlers began carving up Iowa a 1/4 section at a time, but early settlers lacked timber and wire to make fences, so they planted Osage hedges instead. Three to 6 miles of some of the finest quail cover ever grown in ever 1/4 section, all within spitting distance of newly planted "weedy" grain fields. Quail populations exploded like never seen before or likely to be seen again. Quail could be found in every county, but these conditions could not last. By 1920 reports show quail populations beginning to decline as farming practices improved and hedgerows were replaced with barbed wire fence. The 1931-32 winter quail survey reported population densities of 1 quail per 20-40+ acres in the northern third of the state, 1 quail/6-20 ac. in the central third and 1 quail/1-6 ac. in the southern third of the state. However, quail populations have declined steadily, both nationally and in Iowa since the 1930's. Large scale landscape changes and clean farming practices are considered the major factors in this decline. Since survey procedures were standardized in the early 1960's the mean number of quail/30 miles sighted on the August roadside survey has fluctuated over the years with significant declines occurring since 1977 (Fig. 5.6). This decline, along with the severe fluctuations in SW and SC Iowa in recent years, are related to losses in shrubby habitat and clean farming practices that have occurred since row-crop agriculture expanded in the mid 70's and early 80's (Fig. 5.8). Similar to pheasants, quail numbers have declined sharply following harsh winters in 1964-65, 1966-67, 1978-79, 1981-82, and 2000-01 (Fig. 5.8).

Quail have been hunted in Iowa since settlement. The first bag limit was set in 1878 at 25 birds/day, it was reduced to 15/day in 1915. The season was closed in 1917 and a limited season reopened in 1933. Currently the season opens the last Saturday in October and runs through January 31st, statewide, with a bag/possession limit of 8/16 birds. Shooting hours are 8 a.m. to 4:30 p.m. (Table 5.11).



Gray Partridge

Senator H.W. Grant of Waterloo made the first release of Hungarian or gray partridge in Iowa in Blackhawk county in 1902, but all 50 birds died. The first successful release of Huns in Iowa occurred in Palo Alto county in 1905. This release constitutes Iowa's first wild stock. Successful releases were made in Humboldt county in 1906, O'Brien in 1909, and in Kossuth in 1910. By 1914 most northern Iowa counties had received standardized releases of 20 pairs each. All releases, similar to pheasants, were made on leased timbered lands. Reports show many local farmers were surprised when the bird promptly moved to the nearest prairie upland. By 1932 it is estimated the state conservation commission had stocked 20,000+ partridge in Iowa. Most plantings were in northern Iowa, although a few were attempted in south central Iowa; all southern attempts failed. The birds gained their strongest hold in northwest Iowa in Osceola, O'Brien, Dickinson, and Clay counties and were generally present in most northern Iowa counties by 1940.

While numbers of other upland game birds have decreased over time, the number of gray partridge sighted on roadside counts had been increasing until 1990 (Fig. 5.6). Not only had the mean number partridge per 30-mile route increased statewide, but partridge populations had expanded their range from the NW and NC regions to all other regions of the state by 1986 (Fig. 5.9). While losses of woody cover and nesting cover have created less favorable conditions for pheasant and quail, partridge have been more adept at coping with row-crop expansion. The statewide increase in partridge numbers between 1983-89 might be partially attributed to mild winters, drought conditions, and improved nesting conditions on land enrolled in CRP. Five wet and cold nesting seasons during the last 6 years have caused partridge numbers to decline significantly (Fig. 5.6). Huns were imported to this country from the arid, steppe region of southeastern Europe and northern Asia, and research has shown they do not reproduce well in this country during years with wet springs.

Iowa's first partridge season was held in 11 northwestern counties in 1937-39. Standardized hunting seasons were established in 1963. Partridge season opens the second Saturday in October and runs through January 31st, statewide, with a bag/possession limit of 8/16 birds. Shooting hours are 8 a.m. to 4:30 p.m. (Table 5.12).

Eastern Cottontail

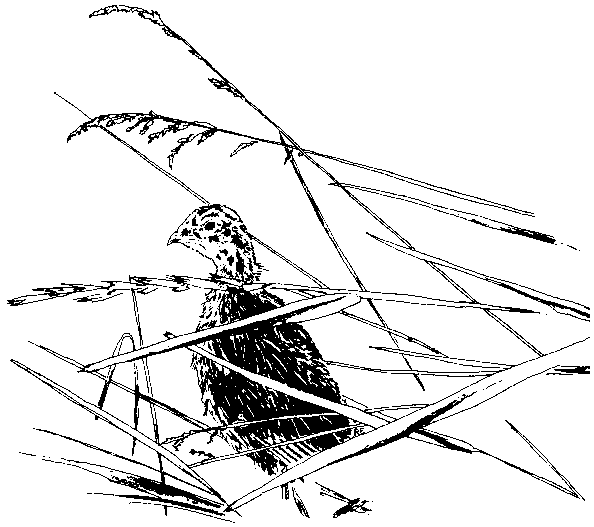
Little is known about the presettlement distribution of cottontail rabbits in Iowa. Cultivation by man no doubt favored rabbits much the same way it favored quail at the turn of the century. Cottontails prefer habitats similar to quail, favoring shrubby-grassy edge habitats. Cottontails may have up to 6 litters a year in Iowa and reproduce best during warm moderately wet springs. Numbers of cottontail rabbits observed on the August roadside survey have fluctuated with

changing land use and weather conditions (Fig. 5.6). Hunter interest has declined in recent years (Fig 5.12). Cottontails have been hunted in Iowa since settlers first arrived. The cottontail season was standardized in 1978 and opens the first Saturday in September and runs through February 28th, statewide, with a bag/possession limit of 10/20 rabbits. Shooting hours are sunrise to sunset (Table 5.13). The rule regarding the opening day of the cottontail season was changed in 1997 to open the 1997-98 season on Sept. 1st. This change in date allows inclusion of the Labor day weekend in all years.

White-tailed Jackrabbit

Before settlement white-tailed jackrabbits could be found everywhere in Iowa, except for a few southeastern counties. They appear in greatest abundance on the glaciated soils of the Des Moines Lobe and the Missouri Loess soils of northwestern Iowa. They are most at home on the wide-open expanses of prairie/wetland/pasture habitat types, although moderate cultivation favors the species. Dry growing seasons appear conducive to hare abundance as population's decline in wet years. Jackrabbit counts have declined greatly over time, closely paralleling the losses of pasture, hay, and small grain acreage's. Increases in the late 1980's can be attributed to increases in grass habitats from the CRP and dry springs.

Jacks have been hunted in Iowa since the time of settlement. Conservation officers reported hunters killing 180+ jacks on two circle hunts in Carroll and Buena Vista counties during the winter of 1960. The jackrabbit season opens the last Saturday in October and runs through December 1st, statewide, with a bag/possession limit of 2/4 rabbits. Shooting hours are sunrise to sunset (Table 5.13). Harvests have tended to decline (Fig. 5.6) with the decline in jackrabbit numbers and declining hunter interest.



2004 Small Game Harvest Survey Results

A random survey of Iowa small game hunters was conducted following the 2004-05 small game season to determine the size and distribution of Iowa's small game harvest. Survey questionnaires were mailed to 8,205 license holders. Survey participants returned 3,432 usable questionnaires for a response rate of 42%. Based on these returns 142,484 small game hunters took to Iowa's fields last fall, a 7% decrease in hunter numbers compared to the year before. By residency status, the number of resident small game hunters was similar to last year, while the number nonresident small game hunters declined 5%. Nonresident small game hunter numbers fell from 45,090 in 2003 to 43,000 in 2004. Hunters from 40 different states visited Iowa last fall to pursue small game.

According to the survey, Iowa had 31,009 nonresident pheasant hunter numbers this past year compared to 33,414 in 2003. Iowa's peak year for nonresident pheasant hunters was 1997 with 50,349. Most of

Iowa's nonresident hunters (56%) come from the surrounding states of Minnesota, Wisconsin, Missouri, Illinois, South Dakota, and Nebraska. Two states, Minnesota and Wisconsin account for 36% of Iowa's nonresident pheasant hunters.

The typical small game hunter reported hunting 9.5 days last fall. Over 75% of small game hunters reported hunting 10 days or less this past season. Most small game hunters hunted only on private land 45% or they hunted a combination of public and private lands 45%. Only 6% reported hunting exclusively on public lands, and 5% did not report where they hunted.

Ring-necked Pheasant - An estimated 130,582 pheasant hunters (54% of licensed hunters) took to Iowa's fields last fall and harvested 756,184 roosters, a 30% decline compared to 2003 harvest estimate of 1,080,466 (Tables 5.6, 5.9; Fig. 5.2, 5.12). The number of resident and nonresident pheasant hunters declined 8% and 7% respectively. Resident hunters hunted an average of 7.5 days last fall and harvested 6 birds during the season. Nonresident pheasant hunters averaged 5 days afield and harvested 6 birds for the season. Hunter success (harvest/day) was highest during the first 9 days of the season. Approximately 71% of the total pheasant harvest occurred in the first 31 days of the 2004 season. Ninety percent of pheasant hunters reported hunting 15 days or less and over 50% hunted 4 days or less. Over 75% of the total pheasant harvest came from the northern two-thirds of Iowa, and resident hunters accounted for 78% of the total harvest. In addition to the regular pheasant season, an estimated 5,680 pheasant hunters took 10,336 youth hunters (under the age of 16) hunting during Iowa's special 2-day youth pheasant season, this compares to 12,445 in 2003. These young hunters harvested an estimated 5,376 roosters, -52% fewer than 2003.

For the sixth year in a row Iowa can not claim bragging rights as the top pheasant state in the nation, as South Dakota again took this honor with a harvest of 1.6 million birds in 2004-05. Over the last decade Iowa pheasant hunters have harvested an average of 1.03 million roosters during the pheasant season. This past seasons harvest estimate was -27% below the 10-year average, and -40% below the historical average of 1.27 million roosters (Table 5.6).

Bobwhite Quail - Approximately 22,336 quail hunters (9% of licensed hunters) harvested 68,256 quail during the 2004-05 quail season. This is a -40% decrease from the 2003 harvest estimate of 114,067 (Tables 5.6, 5.9; Fig. 5.6). Resident hunter numbers decreased -14%, while nonresident hunter numbers increased 5% compared to 2003. Quail hunters averaged 7 days afield and harvested 3 birds for the season. Sixty percent of the quail harvest occurred in the first 31 days of the 2004 season. Over 90% percent of quail hunters hunted 15 days or less and over 50% hunted 4 days or less. Most of the quail harvest (77%) came from the southern and east central regions of the state.

Gray Partridge - Some 4,537 partridge hunters (2% of licensed hunters) harvested 12,535 partridge in 2004-05 (Tables 5.6, 5.9; Fig. 5.6). Hunter numbers were up 12% while harvest was 53% higher than 2003 estimate. Resident hunters accounted for 87% of the total partridge harvest. The average partridge hunter spent 10 days pursuing partridge and harvested 3 birds for the season.

Rabbits - Some 32,195 cottontail rabbit hunters (13% of licensed hunters)

harvested 259,327 rabbits last fall, a 6% increase over the 2003 harvest estimate (Tables 5.6, 5.9; Fig. 5.6). Total rabbit hunter numbers increased 2% compared to last year, but resident hunter numbers were stable, while out of state hunter numbers increased 38%. The average rabbit hunter hunted 9 days and harvested 8 rabbits. Fifty percent of rabbit hunters hunted 3 days or less, while greater than 90% reported hunting 15 days or less. Resident rabbit hunters accounted for 97% of the total cottontail harvest. Sixty-five percent of the reported cottontail harvest came from eastern third of the state.

According to this year's survey 600 small game hunters also harvested 151 jackrabbits in 2004. Only 0.4% of Iowa's licensed hunters stated they hunted jackrabbits, and most of this hunting is likely incidental to other types of hunting. Most of the jackrabbit harvest occurred in the northern third of Iowa.

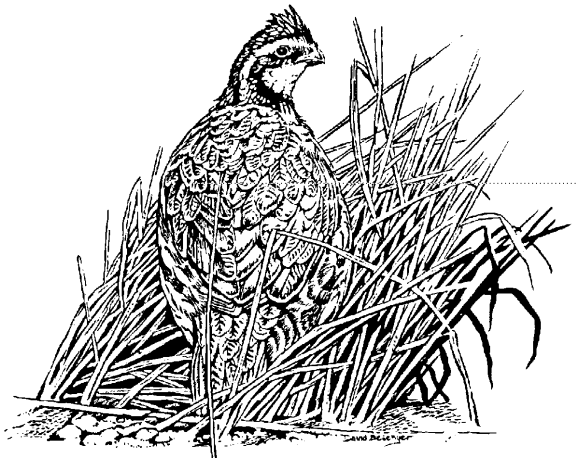


Table 5.1. Mean number of pheasants counted/30-mile route on the August roadside survey regionally and statewide (1962-present). Severe winter weather preceded the August counts in 1965, 69, 75, 79, 82, and 01. Abnormally wet weather occurred during the 74, 83, 84, 93, 99 and 04 nesting seasons. Winter sex ratio and cock harvest data are statewide estimates. Sex ratio counts were done the year succeeding the year listed.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

YEAR	NORTH WEST	NORTH CENTRAL	NORTH EAST	WEST CENTRAL	CENTRAL	EAST CENTRAL	SOUTH WEST	SOUTH CENTRAL	SOUTH EAST	STATEWIDE	SEX[a] RATIO	COCK[b] HARVEST
1980	51.2	61.7	81.2	98.7	72.2	63.5	82.1	68.9	37.2	67.0	3.7	73%
1981	66.4	53.5	83.6	92.9	57.8	72.9	97.1	57.8	35.2	65.9	3.4	71%
1982	26.7	27.9	38.9	55.5	23.1	20.9	41.6	47.7	19.3	32.3	2.9	66%
1983	9.6	12.8	21.7	21.6	13.3	25.3	42.6	51.1	27.5	23.7	2.9	66%
1984	8.8	11.1	19.2	22.1	14.4	24.5	23.8	38.5	26.4	20.6	2.6	62%
1985	21.6	28.0	36.4	40.0	32.7	26.0	59.2	72.6	42.0	38.9	2.1	52%
1986	27.5	20.4	48.2	31.2	24.8	29.0	49.7	65.2	27.2	34.8	2.0	50%
1987	40.2	36.8	59.7	61.4	41.1	33.2	58.5	64.2	39.0	46.8	2.9	66%
1988	33.6	35.0	45.1	60.8	29.6	26.0	45.7	49.8	29.8	38.1	3.3	70%
1989	25.3	36.5	52.1	69.9	57.1	35.3	38.6	40.0	39.0	43.2	2.9	66%
1990	34.3	49.4	63.9	57.9	44.3	24.7	44.5	31.7	27.3	41.2	5.5	82%
1991	37.3	45.3	48.8	77.6	41.6	33.3	61.2	49.4	41.6	46.8	Discontinued	
1992	24.4	50.5	30.5	44.0	42.1	37.8	29.4	23.6	34.2	35.8		
1993	15.8	21.4	15.2	55.2	23.8	25.0	34.3	24.0	28.1	25.9		
1994	45.0	74.1	33.3	83.3	55.6	67.8	47.3	46.0	56.7	56.9		
1995	26.0	63.2	37.6	44.7	54.3	54.3	43.7	27.8	43.2	44.6		
1996	54.7	61.8	29.5	45.2	49.8	59.4	29.8	19.5	28.2	43.4		
1997	46.1	62.0	41.2	37.3	54.7	47.4	31.7	28.8	41.3	44.8		
1998	74.2	56.7	43.1	33.9	49.6	53.9	18.1	15.7	41.7	44.6		
1999	42.7	33.6	21.6	19.5	37.9	36.0	17.5	12.9	27.0	29.1		
2000	60.6	33.3	14.9	29.0	50.3	37.0	25.5	19.3	22.0	34.3		
2001	22.4	16.0	6.2	8.4	22.0	19.0	12.0	7.3	4.6	13.9		
2002	47.0	42.9	13.6	32.0	49.9	32.0	15.7	11.7	22.6	31.7		
2003	81.2	67.3	20.7	36.1	61.2	35.6	29.3	21.8	28.2	44.9		
2004	54.4	34.4	19.0	21.5	35.6	24.4	24.9	19.6	24.4	29.7		
Statistics:												
10 Year Avg.	50.9	47.1	24.7	30.8	46.5	39.9	24.8	18.4	28.3	36.1		
Long-term Avg	39.1	41.4	37.0	47.2	41.6	37.8	40.1	36.6	31.8	39.2	3.1	66%
Percent Change from:												
2003	-33.0	-49.0	-8.2	-40.2	-41.8	-31.3	-15.0	-10.4	-13.5	-33.9		
10 Year Avg.	6.8	-27.1	-23.4	-29.9	-23.4	-38.8	0.3	6.1	-13.9	-17.7		
Long-term Avg	39.2	-17.0	-48.8	-54.3	-14.3	-35.4	-38.0	-46.5	-23.2	-24.1		

[a] Hens per cock.

[b] Percent cock harvest calculated as [((hens/cocks)-1)/(hens/cock)] *100 *(Wooley, J.B. etal.1978. IA WL Res Bull No 24.)*

Table 5.2. Mean number of broods counted/30-mile route and chicks/brood observed on the August roadside survey, regionally and statewide (1962-present). Severe winter weather preceded the August counts in 1965, 69,75,79, 82, and 01. Abnormally wet weather occurred during the 83, 84, 93, 99 and 04 nesting seasons.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

	NORTH WEST		NORTH CENTRAL		NORTH EAST		WEST CENTRAL		CENTRAL		EAST CENTRAL		SOUTH WEST		SOUTH CENTRAL		SOUTH EAST		STATEWIDE	
	BROODS PER 30 MI	CHICKS PER BROOD	BROODS PER 30 MI	CHICKS PER BROOD	BROODS PER 30 MI	CHICKS PER BROOD	BROODS PER 30 MI	CHICKS PER BROOD	BROODS PER 30 MI	CHICKS PER BROOD	BROODS PER 30 MI	CHICKS PER BROOD	BROODS PER 30 MI	CHICKS PER BROOD	BROODS PER 30 MI	CHICKS PER BROOD	BROODS PER 30 MI	CHICKS PER BROOD	BROODS PER 30 MI	CHICKS PER BROOD
YEAR																				
1980	8.1	4.9	9.4	5.2	12.1	5.2	16.6	4.9	11.3	5.0	9.9	4.8	13.5	4.5	11.6	5.3	5.8	5.2	10.7	5.0
1981	11.4	4.4	8.7	4.9	11.2	5.4	15.5	4.8	10.0	4.6	11.5	5.0	16.9	4.4	8.8	5.2	5.5	4.7	10.7	4.8
1982	4.4	4.3	4.1	5.3	6.2	4.9	8.9	4.7	3.6	5.6	3.0	4.5	6.9	4.3	6.8	5.4	2.9	4.2	5.0	4.9
1983	1.6	4.7	1.9	4.9	3.1	5.2	2.8	4.9	1.8	5.4	3.6	5.4	5.9	5.3	7.5	5.9	3.8	5.8	3.4	5.3
1984	1.3	5.9	1.5	5.7	2.8	5.3	3.5	5.2	2.3	5.0	3.6	5.1	3.6	4.4	5.8	5.2	4.1	4.8	3.1	5.2
1985	3.5	5.4	4.2	5.3	4.9	6.1	5.8	5.3	5.4	5.5	3.9	5.4	8.9	5.7	12.2	5.3	5.7	6.1	6.0	5.5
1986	3.9	5.9	2.9	5.0	7.1	5.5	5.6	3.8	4.1	4.7	4.9	4.4	8.1	4.9	10.3	5.3	3.8	4.9	5.4	5.0
1987	5.8	6.2	5.0	6.2	8.5	5.8	9.3	5.1	6.3	4.9	4.8	5.6	9.9	5.0	10.5	5.4	5.7	5.4	7.1	5.5
1988	5.3	5.1	5.0	5.6	5.8	6.6	9.7	5.1	4.0	6.1	3.5	5.8	7.8	4.9	8.5	4.9	4.3	5.5	5.7	5.5
1989	3.8	5.2	5.0	5.9	8.2	5.1	10.9	5.3	8.1	5.4	5.5	5.4	6.9	4.6	6.5	5.2	5.5	5.9	6.5	5.4
1990	5.2	5.0	6.9	5.4	9.6	5.4	9.8	4.5	6.6	4.9	3.9	4.7	7.3	4.9	5.8	4.4	4.1	5.2	6.4	4.9
1991	5.8	4.7	6.4	5.4	7.7	5.4	12.5	4.8	7.1	4.3	4.9	5.0	11.5	4.2	7.9	5.1	6.6	5.2	7.5	4.9
1992	4.3	4.0	7.1	5.6	4.6	4.9	6.9	4.4	6.8	4.4	5.7	5.2	5.1	4.1	4.2	3.9	5.6	4.7	5.7	4.6
1993	2.4	4.8	3.4	5.4	2.3	4.9	8.9	5.1	3.8	5.2	3.6	5.4	5.8	4.3	3.7	5.5	4.2	5.2	4.0	5.1
1994	7.5	4.6	11.2	5.5	5.7	4.5	14.2	4.5	9.4	4.8	10.0	5.4	8.9	4.1	6.8	5.4	8.7	5.4	9.1	5.0
1995	4.8	4.6	10.1	5.0	5.7	5.4	8.1	4.5	9.4	4.5	7.4	6.1	7.3	4.6	4.3	5.5	6.1	5.6	7.2	5.1
1996	9.1	4.6	9.6	5.0	4.8	4.5	7.4	4.6	8.5	4.9	8.9	5.6	5.6	4.0	3.7	3.7	4.0	4.8	7.1	4.7
1997	6.8	5.7	9.1	5.1	6.7	5.1	5.9	5.0	8.6	5.1	7.0	5.4	5.7	3.7	3.8	6.9	6.1	6.3	6.8	5.4
1998	14.1	4.2	9.6	4.7	6.7	5.4	6.1	4.7	8.3	4.6	8.8	5.2	4.3	3.2	2.7	4.3	6.3	5.1	7.7	4.6
1999	7.2	4.5	5.5	4.1	3.5	4.6	3.5	4.2	6.1	4.6	4.7	5.8	3.1	3.8	1.9	5.2	4.1	5.9	4.6	4.7
2000	11.3	4.7	5.5	4.9	2.4	4.7	4.7	5.3	8.8	4.2	5.7	5.2	4.4	4.3	3.5	3.7	3.3	5.2	5.8	4.7
2001	3.3	4.6	2.7	4.6	0.9	5.4	1.6	3.2	3.3	4.9	2.9	5.6	2.3	3.8	1.2	4.4	0.7	3.4	2.2	4.5
2002	7.4	5.1	7.8	5.0	2.4	4.7	5.3	4.8	7.9	5.0	4.5	5.9	3.5	3.4	1.8	5.5	3.6	5.5	5.2	5.1
2003	13.9	4.5	10.3	5.4	4.1	3.7	5.6	5.4	10.3	4.6	5.6	5.3	4.7	4.9	3.5	4.6	4.1	5.3	7.3	4.9
2004	9.5	4.1	6.0	4.0	2.7	4.5	4.1	3.4	6.2	4.1	3.5	5.0	4.8	3.7	3.4	4.4	4.6	4.2	5.2	4.1
Statistics:																				
10 Year Avg.	8.7	4.7	7.6	4.8	4.0	4.8	5.2	4.5	7.7	4.7	5.9	5.5	4.6	3.9	3.0	4.8	4.3	5.1	5.9	4.8
Long-term Avg.	6.5	4.9	6.3	5.2	5.6	5.1	7.7	4.7	6.7	4.9	5.6	5.3	6.9	4.4	5.9	5.0	4.8	5.2	6.2	5.0
Percent Change from:																				
2003	-31.5	-8.6	-41.9	-26.6	-33.3	21.0	-26.0	-36.0	-39.3	-11.8	-38.2	-6.0	1.8	-24.2	-1.1	-3.8	12.9	-20.8	-29.4	-14.8
10 Year Avg.	8.6	-12.6	-21.7	-16.4	-32.5	-5.9	-20.8	-23.8	-19.6	-11.9	-41.2	-9.9	4.2	-5.4	15.5	-8.7	7.7	-18.3	-12.7	-13.4
Long-term Avg.	46.7	-16.2	-6.0	-22.6	-51.7	-11.8	-46.5	-26.9	-7.4	-16.2	-38.7	-6.0	-31.2	-14.5	-41.4	-12.5	-3.2	-19.1	-17.0	-16.8

Table 5.3 Mean number of bobwhite quail and white-tailed jackrabbits counted/30-mile route on the August roadside survey, regionally and statewide (1962 - present).

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

	QUAIL PER ROUTE										JACK-
YEAR	NORTH WEST	NORTH CENTRAL	NORTH EAST	WEST CENTRAL	CENTRAL	EAST CENTRAL	SOUTH WEST	SOUTH CENTRAL	SOUTH EAST	STATEWIDE	**RABBITS STATEWIDE**
1980	0.36	0.00	0.00	0.68	1.39	1.00	5.27	7.88	2.61	2.05	0.15
1981	0.40	0.00	1.00	0.21	0.10	1.64	7.00	11.84	2.43	2.60	0.31
1982	0.00	0.00	0.67	0.05	0.00	0.14	0.87	2.64	2.83	0.79	0.10
1983	0.08	0.08	0.28	0.16	0.50	0.57	1.64	7.32	1.87	1.44	0.05
1984	0.00	0.00	0.22	0.80	0.03	0.00	1.13	2.40	1.57	0.66	0.08
1985	0.00	0.00	1.44	0.00	0.10	0.00	1.27	6.24	3.30	1.37	0.07
1986	0.00	0.00	0.00	0.37	0.03	0.14	1.73	8.16	2.09	1.42	0.12
1987	0.00	0.00	0.33	0.47	0.00	0.74	3.93	14.52	4.17	2.70	0.12
1988	0.00	0.00	0.44	0.94	0.00	0.00	4.87	8.46	4.13	1.96	0.17
1989	0.04	0.00	0.33	1.06	0.10	0.70	6.07	7.67	3.17	1.91	0.22
1990	0.00	0.00	1.00	0.72	0.13	1.04	2.93	6.25	2.21	1.48	0.19
1991	0.08	0.00	0.47	0.72	0.13	0.52	3.13	5.54	2.33	1.34	0.07
1992	0.12	0.00	0.22	1.50	0.07	0.96	2.43	2.83	2.71	1.07	0.14
1993	0.00	0.00	0.37	0.50	0.03	0.78	5.07	2.13	1.61	0.96	0.03
1994	0.08	0.00	0.00	0.65	0.00	0.87	9.19	3.21	3.04	1.58	0.15
1995	0.08	0.00	0.63	0.17	0.06	0.86	2.53	5.54	3.22	1.37	0.06
1996	0.08	0.00	0.21	0.28	0.09	0.71	2.73	0.88	0.65	0.51	0.09
1997	0.00	0.00	0.00	0.00	0.07	1.24	4.27	2.25	0.50	0.77	0.10
1998	0.00	0.00	0.00	0.00	0.07	1.48	1.20	2.30	1.81	0.72	0.09
1999	0.00	0.00	0.05	0.00	0.00	0.13	1.07	2.50	1.50	0.57	0.06
2000	0.00	0.00	0.00	0.20	0.47	0.17	4.40	0.83	0.41	0.57	0.03
2001	0.00	0.00	0.00	0.00	0.09	0.76	1.31	0.50	0.32	0.29	0.05
2002	0.00	0.00	0.00	0.70	0.03	0.27	1.06	0.88	0.96	0.39	0.03
2003	0.00	0.00	0.00	0.00	0.22	0.14	3.27	3.92	1.36	0.89	0.03
2004	0.00	0.00	0.50	0.05	0.19	0.55	2.19	2.64	3.19	0.93	0.03
Statistics:											
10 Year Avg.	0.02	0.00	0.14	0.14	0.13	0.63	2.40	2.22	1.39	0.70	0.06
Long-term Avg.	0.05	0.00	0.33	0.41	0.16	0.62	3.22	4.77	2.16	1.21	0.10
Percent Change from:											
2003					-14.2	300.7	-33.0	-32.7	133.9	5.4	0.0
10 Year Avg.	-100.0		259.2	-67.6	45.8	-13.7	-9.0	18.7	129.2	33.3	-42.8
Long-term Avg.	-100.0	-100.0	52.8	-89.0	20.7	-11.5	-32.1	-44.7	47.7	-23.0	-67.8

Table 5.4 Mean number of gray partridge counted/30-mile route on the August roadside survey, regionally and statewide, (1963-present). Approximately 20 routes were added statewide in 1972.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

YEAR	NORTH WEST	NORTH CENTRAL	NORTH EAST	WEST CENTRAL	CENTRAL	EAST CENTRAL	SOUTH WEST	SOUTH CENTRAL	SOUTH EAST	STATEWIDE
1980	35.04	28.08	0.11	3.00	4.03	0.82	0.00	0.00	0.00	8.81
1981	31.44	23.60	1.78	5.00	4.19	0.32	0.00	0.00	0.00	8.08
1982	18.48	10.16	0.94	3.37	1.87	0.00	0.00	0.00	0.00	4.21
1983	8.04	8.88	0.72	1.84	1.87	0.65	0.00	0.00	0.00	2.65
1984	14.16	13.24	2.11	1.05	3.03	1.05	0.00	0.00	0.00	4.22
1985	26.84	25.23	8.06	10.68	9.26	1.18	0.00	0.00	0.00	9.75
1986	29.48	21.04	10.00	5.79	11.13	2.41	0.13	0.00	0.00	9.62
1987	36.88	35.08	10.56	17.00	20.32	3.17	0.00	0.00	0.61	14.93
1988	42.84	48.65	15.61	17.83	25.07	4.48	0.20	0.38	1.39	19.00
1989	36.54	31.82	14.39	12.06	37.48	0.96	2.07	0.38	0.70	17.27
1990	18.40	20.12	16.68	5.89	6.93	5.52	1.00	0.38	0.88	8.75
1991	13.88	7.52	4.16	3.17	4.23	4.00	0.87	0.54	0.58	4.59
1992	5.15	4.76	6.67	2.61	3.77	4.17	0.07	1.46	2.05	3.58
1993	1.33	1.39	0.84	2.00	1.19	0.17	0.00	0.13	0.17	0.85
1994	7.92	14.48	4.47	10.41	8.29	5.39	0.13	0.29	0.35	6.17
1995	3.72	4.86	4.11	1.28	2.52	3.18	0.00	0.29	0.78	2.47
1996	4.42	6.64	3.00	2.61	1.81	1.24	0.00	0.00	0.00	2.37
1997	9.00	7.33	6.47	3.16	10.77	3.95	0.00	0.00	0.36	5.10
1998	23.00	13.96	9.17	3.58	3.36	1.24	0.07	0.00	0.05	6.42
1999	11.41	2.75	2.11	1.84	3.68	0.52	0.00	0.00	0.09	2.83
2000	6.54	4.75	0.90	2.05	4.00	1.74	0.00	0.00	0.00	2.53
2001	3.23	1.30	3.44	2.75	3.94	1.33	0.13	0.00	0.00	1.90
2002	7.04	2.04	2.94	4.00	5.88	1.23	0.00	0.00	0.00	2.82
2003	6.77	3.04	3.20	1.50	7.00	0.13	0.00	0.00	0.00	2.76
2004	7.77	2.30	1.90	0.86	3.25	1.00	0.00	0.04	0.00	2.12
Statistics:										
10 Year Avg.	8.3	4.9	3.7	2.4	4.6	1.6	0.0	0.0	0.1	3.1
Long-term Avg.	16.4	13.7	5.4	5.0	7.6	2.0	0.2	0.2	0.3	6.2
Percent Change from:										
2003	14.8	-24.4	-40.6	-42.4	-53.6	681.3				-23.2
10 Year Avg.	-6.3	-53.1	-49.0	-63.4	-29.7	-35.7	-100.0	20.6	-100.0	-32.2
Long-term Avg.	-52.5	-83.3	-64.6	-82.8	-57.0	-49.9	-100.0	-74.2	-100.0	-65.5

Table 5.5 Mean number of cottontail rabbits counted/30-mile route on the August roadside survey, regionally and statewide, (1962-present).

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

YEAR	NORTH WEST	NORTH CENTRAL	NORTH EAST	WEST CENTRAL	CENTRAL	EAST CENTRAL	SOUTH WEST	SOUTH CENTRAL	SOUTH EAST	STATEWIDE
1980	2.3	3.0	2.1	4.2	4.2	1.8	5.5	9.8	4.9	4.2
1981	3.4	4.6	6.4	5.2	3.2	7.4	11.1	21.1	9.0	7.8
1982	2.4	2.3	2.7	4.4	2.5	4.9	7.7	19.5	11.7	6.4
1983	3.1	2.5	6.4	4.2	3.1	5.0	7.2	17.6	12.7	6.8
1984	2.0	1.4	3.0	4.2	2.6	4.0	3.5	14.7	14.0	5.6
1985	3.2	2.7	3.9	3.8	4.4	5.5	7.1	22.9	12.0	7.4
1986	3.0	2.6	4.6	4.3	3.8	3.8	9.7	25.2	12.7	7.7
1987	4.1	3.5	3.2	6.3	4.4	4.3	8.1	34.4	7.7	8.6
1988	3.1	1.8	2.0	4.8	2.6	2.5	4.6	12.8	6.7	4.5
1989	2.4	2.4	4.6	5.2	2.9	4.3	6.3	13.5	8.5	5.4
1990	2.7	3.9	7.0	7.7	5.5	7.3	9.2	26.0	14.7	9.2
1991	2.4	1.8	3.4	5.1	2.5	3.3	7.0	16.3	9.1	5.5
1992	2.6	3.8	4.0	4.8	4.1	3.6	7.1	13.7	12.4	6.0
1993	1.3	1.8	3.9	6.5	2.2	5.0	6.7	15.4	10.1	5.5
1994	2.2	1.9	5.4	5.4	3.3	7.4	8.9	14.4	10.4	6.3
1995	3.2	4.0	3.8	5.5	4.8	6.5	13.0	15.7	9.5	7.0
1996	3.6	3.7	5.8	5.2	3.7	6.3	6.4	13.8	8.5	6.2
1997	2.1	2.4	5.2	2.9	3.4	6.2	6.0	11.8	5.1	4.9
1998	2.0	2.7	5.1	3.1	3.7	6.3	5.8	10.4	7.5	5.1
1999	4.1	2.3	5.1	5.0	4.7	9.1	7.9	10.6	6.0	5.9
2000	2.4	2.0	4.9	4.2	4.9	6.9	7.4	19.3	7.2	6.4
2001	1.6	1.6	1.3	2.1	3.0	3.5	5.3	12.0	4.1	3.8
2002	2.7	2.2	2.7	3.7	4.8	6.5	3.8	11.2	9.3	5.3
2003	5.0	3.9	5.7	6.9	8.3	8.0	9.1	21.4	11.0	8.8
2004	3.0	3.3	5.7	4.2	3.9	6.1	8.7	24.9	14.6	8.1
Statistics:										
10 Year Avg.	3.0	2.8	4.5	4.3	4.5	6.5	7.3	15.1	8.3	6.1
Long-term Avg.	2.8	2.7	4.3	4.7	3.9	5.4	7.3	17.1	9.6	6.3
Percent Change from:										
2003	-39.5	-15.1	0.0	-39.5	-52.4	-23.7	-4.2	16.0	32.9	-8.3
10 Year Avg.	1.0	18.4	25.7	-2.0	-13.1	-6.1	18.6	64.7	76.5	31.4
Long-term Avg.	7.5	22.1	31.9	-11.8	1.9	13.2	18.7	45.2	52.7	27.4

Table 5.6 Small game harvest estimates from the Iowa small-game survey (1963-present).

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

YEAR	PHEASANT	QUAIL	COTTON-TAIL	JACK-RABBIT	SQUIRREL	HUNS	RUFFED GROUSE	DUCKS	CANADA GEESE	OTHER GEESE	RACCOON	FOX	COYOTE
1980	1,429,617	524,450	588,363	7,932	844,999	70,764	17,305	543,282	13,984	30,149	310,414	30,825	21,401
1981	1,447,969	563,569	1,134,781	22,860	949,681	69,698	23,940	543,541	26,532	44,376	320,934	50,021	33,660
1982	972,556	302,648	712,227	5,237	759,438	52,782	9,279	659,172	25,842	24,427	381,616	43,259	31,774
1983	1,047,027	270,690	720,012	8,845	669,490	91,035	5,894	591,483	21,350	16,230	257,105	59,048	36,022
1984	724,192	190,708	636,209	6,376	529,316	33,306	13,308	626,868	29,975	31,174	295,650	22,215	25,268
1985	852,716	189,236	717,631	2,108	673,665	62,931	8,336	362,951	23,167	22,399	"------Discontinued------"		
1986	855,894	339,000	472,585	6,082	506,769	60,018	12,701	412,571	26,960	19,086			
1987	1,412,082	397,633	690,091	8,830	532,001	109,061	5,254	300,159	20,597	23,204			
1988	1,139,599	289,592	424,561	3,907	510,065	104,094	13,039	132,514	32,400	16,023			
1989	1,441,990	426,302	435,791	3,025	583,183	118,282	13,335	183,990	28,967	12,373			
1990	1,407,002	321,493	608,805	4,463	466,140	147,922	9,338	173,006	25,592	11,375			
1991	1,138,463	231,818	437,144	3,171	407,172	45,541	5,764	206,938	42,099	12,288			
1992	925,123	179,825	311,607	2,113	328,644	37,328	3,794	242,395	54,160	16,350			
1993	1,226,010	201,461	334,667	3,212	439,477	24,577	1,606	190,800	49,716	19,075			
1994	1,245,580	178,589	288,982	262	395,232	22,331	2,189	190,122	33,349	5,013			
1995	1,443,010	220,999	335,862	6,280	377,714	6,677	2,630	374,490	79,256	14,670			
1996	1,367,060	81,039	331,047	2,666	302,908	36,358	3,011	313,134	83,218	12,786			
1997	1,340,050	181,025	340,661	5,063	265,874	38,045	3,402	371,746	123,029	27,356			
1998	1,237,980	100,594	255,149	10,008	319,081	25,613	0	535,949	79,101	14,564			
1999[a]	899,174	110,128	237,409	8,777	242,224	20,200	1,373	"------Discontinued------"					
2000[b]	1,001,867	140,828	350,739	1,626	217,116	19,258	489						
2001	470,116	32,226	196,483	3,840	248,833	5,814	903						
2002	729,460	63,872	167,284	1,637	152,825	5,130	265						
2003	1,080,466	114,067	243,699	738	202,729	8,204	1,083						
2004	756,184	68,256	259,327	151	233,530	12,535	152						
Statistics:													
10 Year Avg.	1,032,537	111,303	271,766	4,079	256,283	17,783	1,331						
Long-term Avg.	1,103,647	228,802	449,245	5,168	446,324	49,100	6,336	366,058	43,121	19,627	313,144	41,074	29,625
Percent Change from:													
2003	-30.0	-40.2	6.4	-79.5	15.2	52.8	-86.0						
10 Year Avg.	-26.8	-38.7	-4.6	-96.3	-8.9	-29.5	-88.6						
Long-term Avg.	-31.5	-70.2	-42.3	-97.1	-47.7	-74.5	-97.6						

[a] Small Game Harvest Survey changed from a single to a double mailing. Harvest estimates from 1999-present are more conservative than pre-1999 estimates.

[b] Survey methodology changed account for unrealistic harvest (e.g. reports of 1 bird harvested for 60 days effort).

Table 5.7 Mean number of hens with broods and hens without broods counted/30-mile route on the Iowa August roadside survey, regionally and statewide, (1962 - present). Severe winter weather preceded the August counts in 1965, 69,75,79, 82 and 01. Abnormally wet weather occurred during the 83, 84, 93, 99 and 04 nesting seasons.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

	NORTH WEST		NORTH CENTRAL		NORTH EAST		WEST CENTRAL		CENTRAL		EAST CENTRAL		SOUTH WEST		SOUTH CENTRAL		SOUTH EAST		STATEWIDE	
	HENS W/O	HENS WITH	HENS W/O	HENS WITH	HENS W/O	HENS WITH	HENS W/O	HENS WITH	HENS W/O	HENS WITH	HENS W/O	HENS WITH	HENS W/O	HENS WITH	HENS W/O	HENS WITH	HENS W/O	HENS WITH	HENS W/O	HENS WITH
YEAR	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS	BROODS
1980	2.6	5.3	2.8	6.2	2.8	9.4	2.9	10.5	3.6	8.6	2.4	8.2	4.5	7.7	2.4	5.8	0.9	3.8	2.7	7.1
1981	3.1	8.0	2.2	5.4	3.3	9.6	2.9	10.0	2.9	6.8	3.3	9.9	4.5	10.7	2.4	6.4	1.4	3.6	2.8	7.5
1982	1.4	2.8	1.4	3.2	1.5	5.1	2.4	6.3	1.0	2.3	1.5	2.3	2.2	5.0	1.2	5.4	1.2	2.5	1.5	3.7
1983	0.9	0.8	0.8	1.1	1.3	2.0	1.3	1.8	0.6	1.5	1.0	2.7	2.3	5.1	2.0	6.1	1.3	2.8	1.2	2.5
1984	0.3	0.9	0.7	0.8	1.2	1.9	0.8	2.0	0.7	1.5	1.0	2.9	0.7	2.1	1.9	4.8	0.9	2.7	0.9	2.2
1985	0.4	1.8	1.0	2.4	1.1	2.8	1.2	4.0	0.9	2.8	1.0	2.7	0.9	5.5	1.2	6.3	0.8	3.9	0.9	3.5
1986	0.5	2.2	1.0	1.8	1.4	4.2	0.8	3.3	1.1	2.5	1.3	3.5	1.7	4.5	2.0	6.5	1.8	2.9	1.3	3.4
1987	1.1	3.0	1.0	3.4	1.6	3.6	1.1	6.1	1.4	4.4	1.3	3.2	1.3	5.9	2.2	6.1	1.4	3.6	1.4	4.2
1988	1.1	3.2	0.8	3.0	2.3	4.4	1.4	5.1	0.8	2.8	1.4	2.3	1.5	5.3	1.2	5.2	1.7	3.1	1.3	3.7
1989	0.8	2.9	1.4	3.5	0.9	6.4	2.5	7.1	1.4	5.6	1.0	3.5	1.1	4.5	1.3	4.0	1.7	4.2	1.3	4.5
1990	1.6	4.0	2.2	5.4	2.3	7.2	3.0	6.8	2.8	5.4	2.2	2.5	1.6	5.2	1.2	3.3	1.4	3.0	2.0	4.6
1991	1.9	4.4	2.0	5.0	2.5	5.2	2.7	7.9	2.0	4.5	2.7	3.2	3.1	6.9	1.3	5.4	0.9	4.8	2.0	5.1
1992	1.3	3.2	1.7	5.3	1.8	3.2	3.6	4.7	2.5	4.6	1.9	4.1	3.9	3.9	1.1	3.4	1.7	3.6	2.0	4.1
1993	0.8	1.5	1.3	2.1	0.9	1.4	1.4	6.1	0.8	2.8	1.4	2.3	1.2	4.2	0.6	2.3	0.7	3.0	1.0	2.7
1994	0.8	5.8	2.5	7.3	1.2	3.9	4.1	9.2	2.0	6.3	3.1	8.0	1.8	5.0	1.1	5.0	2.3	7.0	2.1	6.4
1995	1.2	3.2	2.2	7.6	1.2	3.8	2.5	4.9	1.9	6.6	2.6	5.5	1.6	5.8	0.5	3.0	1.6	4.8	1.7	5.1
1996	1.9	7.0	2.7	7.7	1.8	3.8	2.9	6.0	2.2	5.8	1.9	7.1	1.4	4.1	1.3	2.5	1.6	3.4	2.0	5.4
1997	1.6	4.3	2.0	7.1	1.2	5.2	1.7	3.8	2.5	7.1	2.4	5.0	1.4	4.4	1.0	2.2	1.3	4.2	1.7	5.0
1998	1.9	7.3	2.1	6.6	1.7	4.9	1.2	4.3	2.4	5.8	1.5	5.4	1.6	2.0	0.9	1.5	2.6	4.8	1.8	4.9
1999	3.2	5.5	2.8	3.9	0.8	2.8	1.1	2.3	1.9	4.5	2.5	4.0	0.6	2.2	0.4	1.5	1.0	2.9	1.7	3.5
2000	3.6	7.3	2.9	4.0	0.8	1.7	1.8	3.3	2.1	6.3	2.6	4.4	1.2	3.1	1.0	2.5	0.7	2.4	2.0	4.1
2001	1.8	2.6	0.5	1.9	0.2	0.6	0.4	1.1	0.6	2.4	1.2	1.9	0.7	1.2	0.4	0.7	0.5	0.4	0.7	1.5
2002	2.0	4.9	1.4	5.1	0.7	1.3	0.8	3.1	1.3	5.1	1.5	3.4	0.5	1.6	0.4	1.0	0.6	2.3	1.1	3.3
2003	3.5	10.1	2.7	7.4	0.7	2.6	1.4	3.9	2.5	7.0	1.9	3.7	0.5	2.5	0.4	2.1	1.0	2.7	1.8	5.0
2004	5.0	7.0	3.5	4.6	1.1	2.4	1.4	3.0	1.7	4.2	0.8	3.2	1.6	2.9	0.8	2.0	0.8	2.8	1.9	3.7
Statistics:																				
10 Year Avg.	2.6	5.9	2.3	5.6	1.0	2.9	1.5	3.6	1.9	5.5	1.9	4.4	1.1	3.0	0.7	1.9	1.2	3.1	1.6	4.1
Long-term Avg.	1.8	4.4	1.8	4.5	1.5	4.0	1.9	5.1	1.8	4.7	1.8	4.2	1.7	4.4	1.2	3.8	1.3	3.4	1.6	4.3
Percent Change from:																				
2003	42.9	-30.2	28.7	-37.2	57.1	-9.6	3.3	-23.3	-32.1	-40.4	-57.2	-13.6	234.7	16.5	81.8	-1.9	-23.8	3.0	10.8	-25.9
10 Year Avg.	94.4	18.8	52.7	-17.2	6.8	-19.1	-6.4	-15.9	-10.7	-24.1	-56.7	-26.9	41.9	-3.6	12.7	8.0	-34.3	-8.5	18.6	-10.9
Long-term Avg.	182.9	61.3	90.9	3.5	-24.2	-40.8	-25.1	-40.7	-2.1	-11.2	-54.8	-24.0	-9.7	-35.4	-34.0	-46.2	-39.7	-17.3	19.1	-13.4

Table 5.8 Sales of hunting-related licenses and stamps in Iowa (1942-present).

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

	RESIDENT									NON-RESIDENT					
					FURHARVESTER					HUNTING					
YEAR[a]	HUNTING	COMBINATION	FUR/FISH GAME	FUR over 16	over 16[b]	under 16	TOTAL[c]	RESIDENT TOTAL[d]	LIFETIME over 65	over 18	under 18	TOTAL LICENSE[e]	HABITAT STAMP[f]	IA DUCK STAMP[g]	HUNT PRESERVE[h]
1980	161,596	105,059		19,366	19,366	5,529	24,895	266,655				30,793	296,667	50,202	822
1981	158,551	107,502		19,116	19,116	4,990	24,106	266,053				31,379	297,297	45,751	742
1982	139,044	106,925		17,505	17,505	4,248	21,753	245,969				24,002	269,290	44,391	751
1983	134,140	103,711		14,964	14,964	3,699	18,663	237,851				23,206	261,340	42,981	766
1984	120,341	101,178		14,537	14,537	3,329	17,866	221,519				21,927	243,154	44,445	696
1985	118,163	90,281		25,156	25,156	3,519	28,675	208,444				22,977	233,779	37,681	729
1986	121,640	83,653	63	23,646	23,709	3,064	26,773	205,356				27,254	236,219	40,157	882
1987	134,155	78,285	8,234	20,689	28,923	3,338	32,261	220,674				35,676	259,350	43,357	1,112
1988	130,547	77,342	10,699	13,406	24,105	2,380	26,485	218,588				35,023	257,702	34,799	1,696
1989	134,894	81,795	9,435	8,976	18,411	1,530	19,941	226,124				40,197	271,342	32,920	1,499
1990	131,601	80,241	7,794	6,059	13,853	973	14,826	219,636				41,500	263,530	31,468	1,786
1991	127,432	81,977	7,791	6,417	14,208	719	14,927	217,200				45,792	266,845	32,537	1,454
1992	142,059	54,028	7,421	6,851	14,272	793	15,065	203,508				39,211	247,673	34,304	1,810
1993	137,489	52,416	8,061	6,611	14,672	829	15,501	197,966				29,231	232,298	31,741	2,137
1994	148,770	54,185	8,334	7,477	15,811	952	16,763	211,289				45,610	260,815	33,232	1,870
1995	146,497	55,367	8,863	6,480	15,343	903	16,246	210,727				48,028	263,531	34,903	2,467
1996	137,724	62,834	9,105	8,132	17,237	1,021	18,258	209,663				53,058	265,653	43,060	2,317
1997	135,010	66,398	10,122	8,208	18,330	1,066	19,396	211,530				52,730	269,443	38,275	2,516
1998	133,000	65,129	10,661	7,664	18,325	1,078	19,403	208,790				50,511	266,519	40,349	3,107
1999*	"----------Discontinued----------"				15,804	1,004	16,808	206,210	2,885	42,379	2,086	44,465	253,943	42,588	2,772
2000					12,793	1,936	14,729	200,995	1,642	39,067	1,901	40,968	245,351	40,913	2,898
2001					14,665	658	15,323	194,051	1,515	26,748	1,090	27,838	237,407	40,378	2,963
2002					14,235	644	14,879	189,138	2,339	36,728	1,532	38,260	229,829	37,574	3,282
2003					13,753	651	14,404	193,279	1,772	43,145	1,951	45,096	240,527	35,746	3,173
2004					13,906	701	14,607	190,154	1,786	41,159	1,847	43,006	235,336	34,611	3,254
Statistics:															
10 Year Avg.					15,439	966	16,405	201,454	1,990	38,204	1,735	44,396	250,754	38,840	2,875
Long-term Avg.					17,320	1,982	19,302	215,255	1,990	38,204	1,735	37,510	256,194	38,735	1,900
Percent Change from:															
2003					1.1	7.7	1.4	-1.6	0.8	-4.6	-5.3	-4.6	-2.2	-3.2	2.6
10 Year Avg.					-9.9	-27.4	-11.0	-5.6	-10.2	7.7	6.5	-3.1	-6.1	-10.9	13.2
Long-term Avg.					-19.7	-64.6	-24.3	-11.7				14.7	-8.1	-10.6	71.3

[a] Change to ELSI electronic licensing system in 1999. First four license types modified or eliminated under ELSI.

[b] Furharvester (over 16) sales is the sum of discontinued fur(over 16) and fur/fish/game licenses, until ELSI system implementation in 1999.

[c] Total furharvester sales is the sum of the furharvester over and under 16 sales columns. Total does not include non-resident sales.

[d] Total resident licenses is sum of resident hunt, resident combination, and fur/fish/game, until ELSI system implementation in 1999.

[e] For comparisons to previous years total NR licenses is sum of non-resident over and under 18 sales after 1999 ELSI implementation.

[fgh] Numbers represent combined resident and non-resident sales.

Table 5.9 Estimated hunter numbers from the Iowa small-game survey (1963-present). Prior to 1978 Canada geese = all geese.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

YEAR	PHEASANT	QUAIL	COTTON-TAIL	JACK-RABBIT	SQUIRREL	HUNS	RUFFED GROUSE	DUCKS	CANADA GEESE	OTHER GEESE	RACCOON	FOX	COYOTE
1980	252,440	86,816	119,901	8,526	111,425	27,554	9,281	65,206	25,348	25,441	39,900	39,666	34,125
1981	254,803	97,430	150,881	11,106	117,942	28,731	7,059	55,394	24,277	22,266	36,108	43,985	35,443
1982	214,263	68,479	118,994	4,862	105,262	21,532	8,317	56,335	27,211	22,149	33,321	39,754	32,852
1983	203,014	63,060	118,535	7,331	98,553	25,366	5,701	53,446	20,728	16,761	27,631	39,401	28,652
1984	176,312	58,630	102,993	5,543	86,380	21,179	7,573	53,187	26,681	22,702	25,977	35,144	33,322
1985	175,225	54,427	107,500	6,568	88,849	25,956	5,949	39,832	21,629	15,234	"------Discontinued------"		
1986	184,759	63,985	92,727	5,193	84,082	30,822	6,874	44,184	24,646	16,331			
1987	212,118	83,754	103,199	7,298	77,819	40,878	6,053	36,805	18,391	14,201			
1988	204,659	74,584	84,529	4,376	74,783	44,154	8,353	25,657	16,309	9,348			
1989	211,586	79,971	89,054	5,634	80,937	48,785	9,611	24,032	16,275	11,253			
1990	210,845	72,886	87,437	4,679	70,539	49,220	7,095	23,568	14,792	6,900			
1991	202,319	62,684	83,200	4,001	63,601	25,165	4,884	26,261	17,073	6,828			
1992	176,430	56,287	66,967	5,802	60,443	22,949	4,378	34,270	23,538	10,485			
1993	166,260	49,345	65,704	1,547	62,175	14,920	2,197	28,292	19,839	10,164			
1994	189,664	50,258	68,840	1,239	57,381	18,294	2,521	29,843	25,544	10,107			
1995	200,302	50,839	68,499	4,361	57,495	15,954	3,940	41,620	31,795	10,034			
1996	205,592	44,974	75,870	2,623	56,382	21,914	2,525	35,670	29,743	7,076			
1997	205,203	35,473	51,785	2,872	43,632	12,330	2,031	46,831	35,781	10,360			
1998	184,585	32,378	54,588	1,604	53,859	13,502	152	41,165	30,258	9,992			
1999[a]	181,673	41,117	50,254	2,456	46,994	11,390	1,481	"------Discontinued------"					
2000	167,521	39,957	46,311	1,572	35,395	6,043	960						
2001	122,906	24,591	36,125	2,933	36,760	5,757	3,227						
2002	127,599	20,887	27,945	1,692	25,482	4,417	1,060						
2003	142,233	24,895	31,600	326	27,863	4,054	930						
2004	130,583	22,336	32,195	600	29,302	4,537	273						
Statistics:													
10 Year Avg.	166,820	33,745	47,517	2,104	41,316	9,990	1,658						
Long-term Avg.	188,116	54,402	77,425	4,190	66,133	21,816	4,497	40,084	23,677	13,560	32,587	39,590	32,879
Percent Change from:													
2003	-8.2	-10.3	1.9	84.0	5.2	11.9	-70.6						
10 Year Avg.	-21.7	-33.8	-32.2	-71.5	-29.1	-54.6	-83.5						
Long-term Avg.	-30.6	-58.9	-58.4	-85.7	-55.7	-79.2	-93.9						

[a] Small Game Harvest Survey changed from a single to a double mailing. Hunter estimates from 1999-present are more conservative than pre-1999 estimates.

Table 5.10 Iowa's ring-necked pheasant hunting seasons.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

YEAR	DATES REGULAR / YOUTH	SEASON LENGTH	SHOOTING HOURS	LIMIT - BAG/POSS REGULAR	LIMIT - BAG/POSS YOUTH	# COUNTIES OPEN
1980-81	1 NOV- 4 JAN	65	0800-1630	3/6		STATEWIDE
1981-82	7 NOV- 3 JAN	58	0800-1630	3/6		STATEWIDE
1982-83	6 NOV- 2 JAN	58	0800-1630	3/6		STATEWIDE
1983-84	5 NOV- 1 JAN	58	0800-1630	3/6		STATEWIDE
1984-85	3 NOV- 1 JAN	60	0800-1630	3/6		STATEWIDE
1985-86	2 NOV- 5 JAN	65	0800-1630	3/9		STATEWIDE
1986-87	1 NOV- 4 JAN	65	0800-1630	3/9		STATEWIDE
1987-88	31 OCT- 3 JAN	65	0800-1630	3/12		STATEWIDE
1988-89	29 OCT- 8 JAN	72	0800-1630	3/12		STATEWIDE
1989-90	28 OCT-10 JAN	75	0800-1630	3/12		STATEWIDE
1990-91	27 OCT-10 JAN	76	0800-1630	3/12		STATEWIDE
1991-92	26 OCT-10 JAN	77	0800-1630	3/12		STATEWIDE
1992-93	31 OCT-10 JAN	72	0800-1630	3/12		STATEWIDE
1993-94	30 OCT-10 JAN	72	0800-1630	3/12		STATEWIDE
1994-95	29 OCT-10 JAN	74	0800-1630	3/12		STATEWIDE
1995-96	28 OCT-10 JAN	75	0800-1630	3/12		STATEWIDE
1996-97	26 OCT-10 JAN	77	0800-1630	3/12		STATEWIDE
1997-98[1]	26 OCT-10 JAN / 18-19 OCT	78/2	0800-1630	3/12	1/2	STATEWIDE
1998-99	31 OCT-10 JAN / 23-24 OCT	72/2	0800-1630	3/12	1/2	STATEWIDE
1999-00	30 OCT-10 JAN / 22-23 OCT	73/2	0800-1630	3/12	1/2	STATEWIDE
2000-01	28 OCT-10 JAN / 21-22 OCT	75/2	0800-1630	3/12	1/2	STATEWIDE
2001-02	27 OCT-10 JAN / 20-21 OCT	76/2	0800-1630	3/12	1/2	STATEWIDE
2002-03	26 OCT-10 JAN / 19-20 OCT	77/2	0800-1630	3/12	1/2	STATEWIDE
2003-04	25 OCT-10 JAN / 18-19 OCT	78/2	0800-1630	3/12	1/2	STATEWIDE
2004-05	30 OCT-10 JAN / 23-24 OCT	73/2	0800-1630	3/12	1/2	STATEWIDE

[1] Iowa's first youth pheasant season, open to resident hunters 15 years or younger.

Table 5.11 Iowa's Bobwhite quail hunting seasons.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

YEAR	DATES	SEASON LENGTH	SHOOTING HOURS	LIMIT BAG/POSS	AREA OPEN
1980-81	1 NOV-31 JAN	92	0800-1630	8/16	STATEWIDE
1981-82	7 NOV-31 JAN	86	0800-1630	8/16	STATEWIDE
1982-83	6 NOV-31 JAN	87	0800-1630	8/16	STATEWIDE
1983-84	5 NOV-31 JAN	88	0800-1630	8/16	STATEWIDE
1984-85	3 NOV-31 JAN	90	0800-1630	8/16	STATEWIDE
1985-86	2 NOV-31 JAN	91	0800-1630	8/16	STATEWIDE
1986-87	1 NOV-31 JAN	92	0800-1630	8/16	STATEWIDE
1987-88	31 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
1988-89	29 OCT-31 JAN	95	0800-1630	8/16	STATEWIDE
1989-90	28 OCT-31 JAN	96	0800-1630	8/16	STATEWIDE
1990-91	27 OCT-31 JAN	97	0800-1630	8/16	STATEWIDE
1991-92	26 OCT-31 JAN	98	0800-1630	8/16	STATEWIDE
1992-93	31 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
1993-94	30 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
1994-95	29 OCT-31 JAN	95	0800-1630	8/16	STATEWIDE
1995-96	28 OCT-31 JAN	96	0800-1630	8/16	STATEWIDE
1996-97	26 OCT-31 JAN	98	0800-1630	8/16	STATEWIDE
1997-98	25 OCT-31 JAN	99	0800-1630	8/16	STATEWIDE
1998-99	31 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
1999-00	30 OCT-31 JAN	94	0800-1630	8/16	STATEWIDE
2000-01	28 OCT-31 JAN	96	0800-1630	8/16	STATEWIDE
2001-02	27 OCT-31 JAN	97	0800-1630	8/16	STATEWIDE
2002-03	26 OCT-31 JAN	98	0800-1630	8/16	STATEWIDE
2003-04	25 OCT-31 JAN	99	0800-1630	8/16	STATEWIDE
2004-05	30 OCT-31 JAN	94	0800-1630	8/16	STATEWIDE

Table 5.12 Iowa's Hungarian partridge hunting seasons.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

YEAR	DATES	SEASON LENGTH	SHOOTING HOURS	LIMIT BAG/POSS	AREA OPEN
1980-81	1 NOV-31 JAN	92	0800-1630	6/12	N. I-80
1981-82	7 NOV-31 JAN	86	0800-1630	6/12	N. I-80
1982-83	6 NOV-31 JAN	87	0800-1630	6/12	N. I-80
1983-84	5 NOV-31 JAN	88	0800-1630	6/12	N. I-80
1984-85	3 NOV-31 JAN	90	0800-1630	6/12	N. I-80
1985-86	2 NOV-31 JAN	91	0800-1630	6/12	N. I-80
1986-87	1 NOV-31 JAN	92	0800-1630	6/12	STATEWIDE
1987-88	31 OCT-31 JAN	93	0800-1630	8/16	STATEWIDE
1988-89	29 OCT-31 JAN	94	0800-1630	8/16	STATEWIDE
1989-90	7 OCT-31 JAN	117	0800-1630	8/16	STATEWIDE
1990-91	6 OCT-31 JAN	118	0800-1630	8/16	STATEWIDE
1991-92	5 OCT-31 JAN	119	0800-1630	8/16	STATEWIDE
1992-93	10 OCT-31 JAN	114	0800-1630	8/16	STATEWIDE
1993-94	9 OCT-31 JAN	115	0800-1630	8/16	STATEWIDE
1994-95	8 OCT-31 JAN	116	0800-1630	8/16	STATEWIDE
1995-96	14 OCT-31 JAN	109	0800-1630	8/16	STATEWIDE
1996-97	12 OCT-31 JAN	112	0800-1630	8/16	STATEWIDE
1997-98	11 OCT-31 JAN	113	0800-1630	8/16	STATEWIDE
1998-99	10 OCT-31 JAN	114	0800-1630	8/16	STATEWIDE
1999-00	9 OCT-31 JAN	115	0800-1630	8/16	STATEWIDE
2000-01	14 OCT-31 JAN	110	0800-1630	8/16	STATEWIDE
2001-02	13 OCT-31 JAN	111	0800-1630	8/16	STATEWIDE
2002-03	12 OCT-31 JAN	112	0800-1630	8/16	STATEWIDE
2003-04	11 OCT-31 JAN	113	0800-1630	8/16	STATEWIDE
2004-05	9 OCT-31 JAN	115	0800-1630	8/16	STATEWIDE

Table 5.13 Iowa's cottontail and jackrabbit seasons.

(Year summaries prior to the first year given are archived at http://www.iowadnr.com/wildlife/)

YEAR	DATES COTTONTAILS / JACKRABBITS	SEASON LENGTH	SHOOTING HOURS	LIMIT - BAG/POSS COTTONTAILS	LIMIT - BAG/POSS JACKRABBITS	AREA OPEN
1980-81	6 SEP-28 FEB/1 NOV-4 JAN	176/65	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1981-82	5 SEP-28 FEB/7 NOV-3 JAN	177/58	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1982-83	4 SEP-28 FEB/6 NOV-2 JAN	178/58	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1983-84	3 SEP-29 FEB/5 NOV-18 DEC	180/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1984-85	1 SEP-28 FEB/3 NOV-16 DEC	181/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1985-86	31 AUG-28 FEB/2 NOV-15 DEC	182/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1986-87	30 AUG-28 FEB/1 NOV-14 DEC	183/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1987-88	5 SEP-29 FEB/31 OCT-13 DEC	178/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1988-89	3 SEP-28 FEB/28 OCT-10 DEC	179/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1989-90	2 SEP-28 FEB/29 OCT-11 DEC	180/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1990-91	1 SEP-28 FEB/27 OCT-9 DEC	181/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1991-92	31 AUG-29 FEB/26 OCT-8 DEC	183/44	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1992-93	5 SEP-28 FEB/31 OCT-6 DEC	177/37	SUNRISE-SUNSET	10/20	3/6	STATEWIDE
1993-94	4 SEP-28 FEB/30 OCT-5 DEC	176/37	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1994-95	3 SEP-28 FEB/29 OCT-4 DEC	177/37	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1995-96	2 SEP-28 FEB/28 OCT-1 DEC	178/35	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1996-97	7 SEP-28 FEB/26 OCT-1 DEC	174/37	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1997-98	1 SEP-28 FEB/25 OCT-1 DEC	181/38	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1998-99	1 SEP-28 FEB/30 OCT-1 DEC	181/33	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
1999-00	1 SEP-28 FEB/30 OCT-1 DEC	181/33	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2000-01	1 SEP-28 FEB/28 OCT-1 DEC	181/35	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2001-02	1 SEP-28 FEB/27 OCT-1 DEC	181/36	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2002-03	1 SEP-28 FEB/26 OCT-1 DEC	181/37	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2003-04	1 SEP-28 FEB/25 OCT-1 DEC	181/38	SUNRISE-SUNSET	10/20	2/4	STATEWIDE
2004-05	1 SEP-28 FEB/30 OCT-1 DEC	181/33	SUNRISE-SUNSET	10/20	2/4	STATEWIDE

1963-1977 SEASONS AND LIMITS ARE AN AGGREGATE OF COTTONTAILS AND JACKRABBITS.

Figure 5.1. Survey regions for the August Roadside Survey.

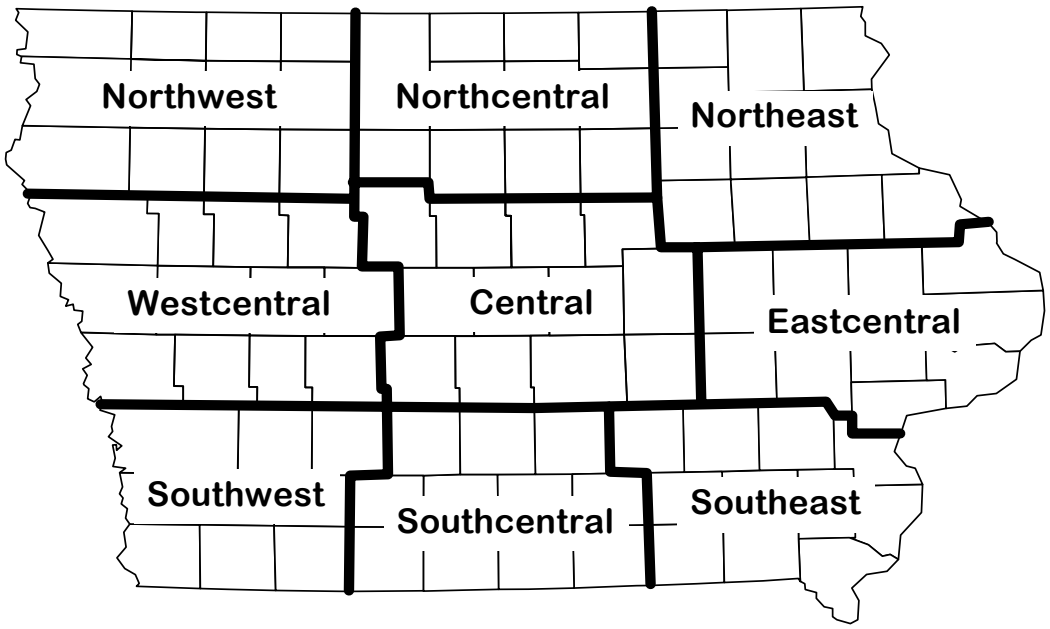


Figure 5.2 Statewide trends in pheasant harvest and August roadside survey counts

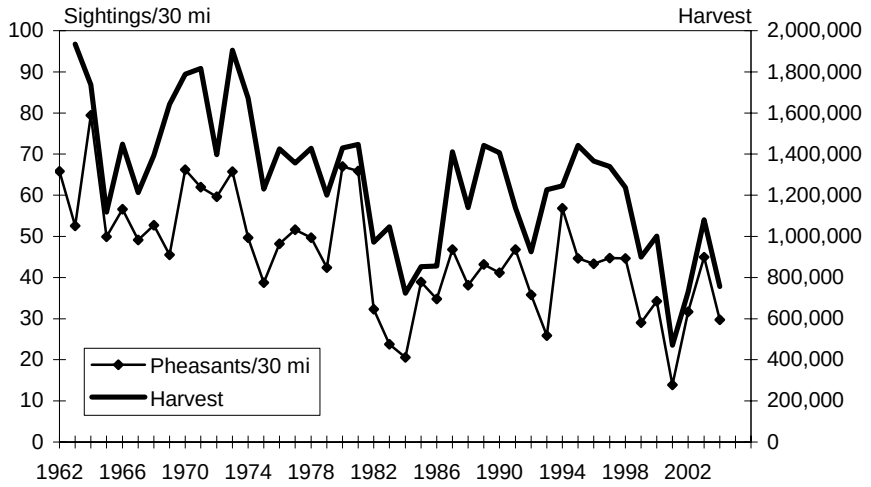


Figure 5.3 Statewide trends in pheasant broods and average brood size from August roadside survey

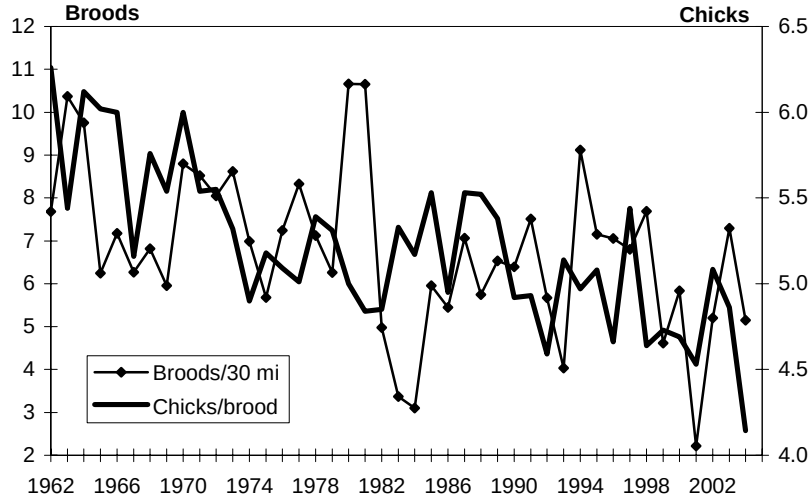


Figure 5.4 Statewide sex ratio and estimated cock harvest from winter pheasant surveys

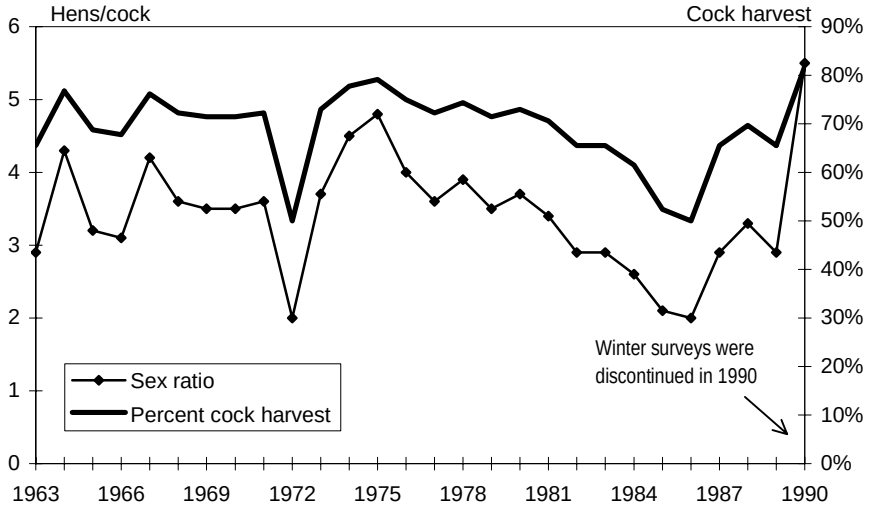


Figure 5.5 Statewide trends in pheasant hens with and without broods from August roadside survey

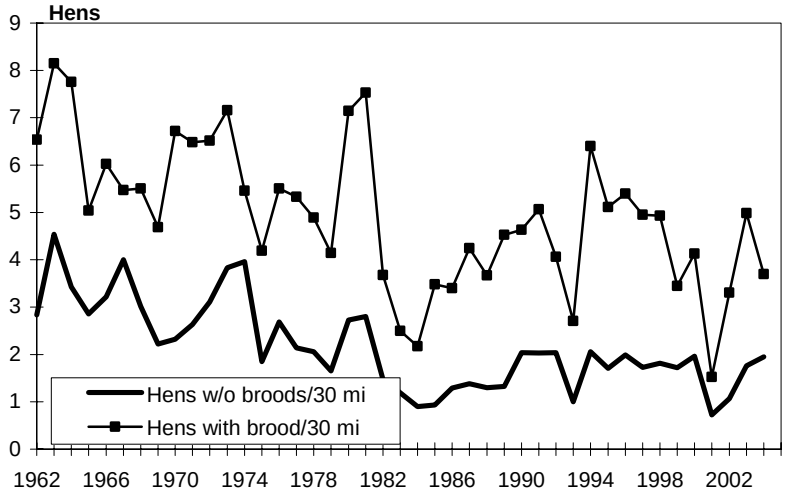
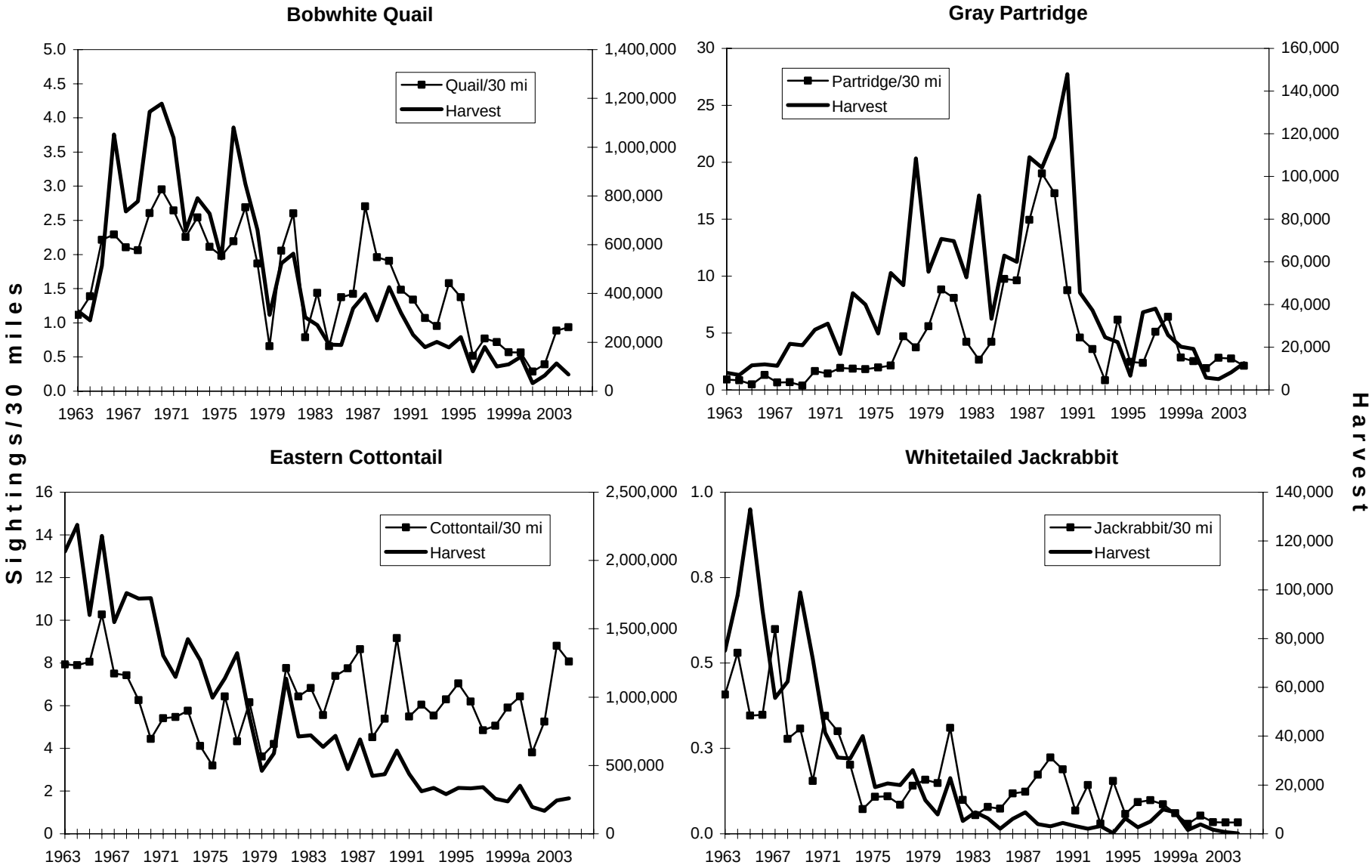


Figure 5.6 Statewide trends in small game harvests and August roadside survey counts



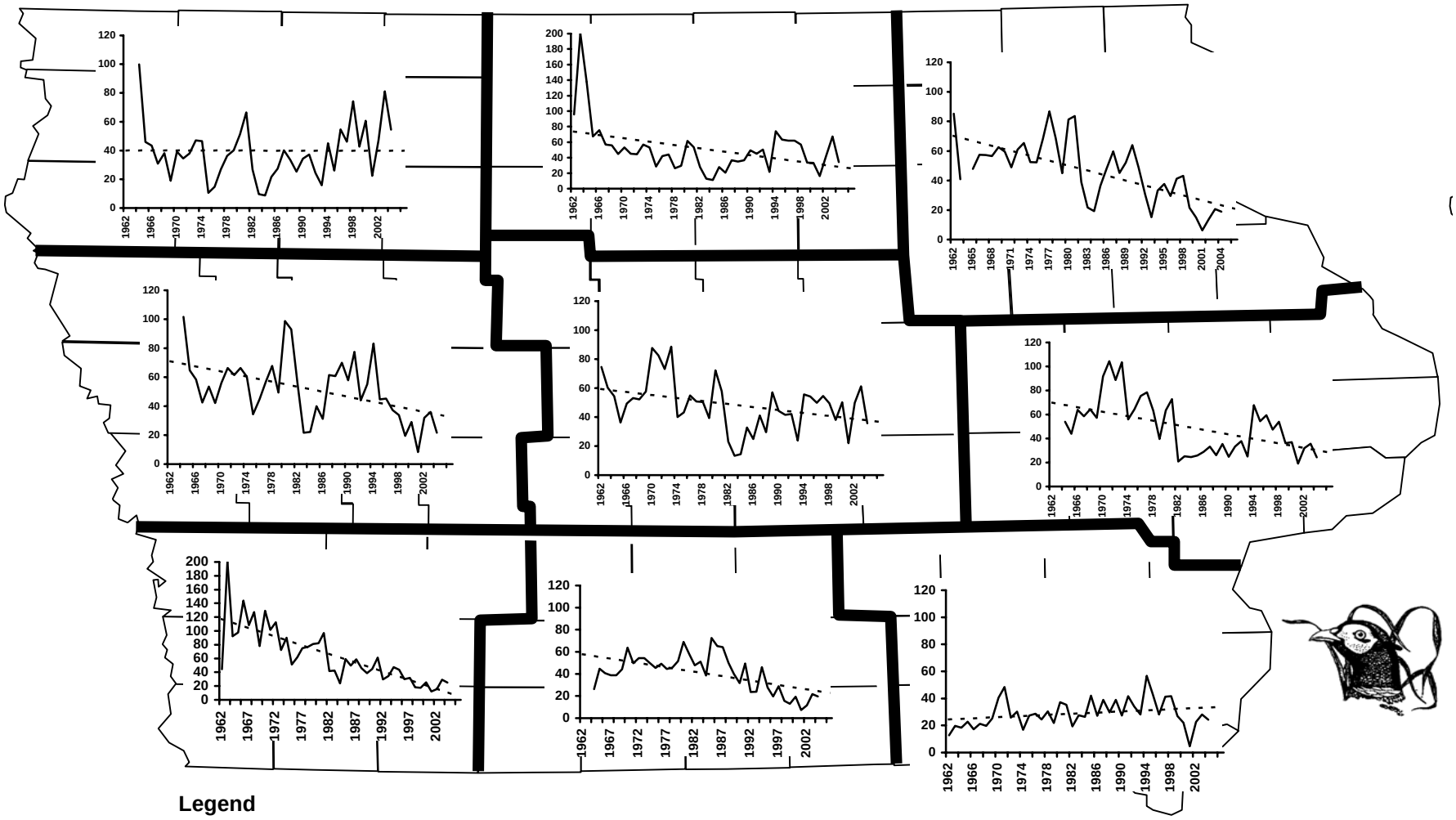


Figure 5.7 Regional trends in ring-necked pheasant numbers from the August roadside survey (1962-present).

Note: Because of variation in historical counts, vertical axises among survey regions are not to the same scale.

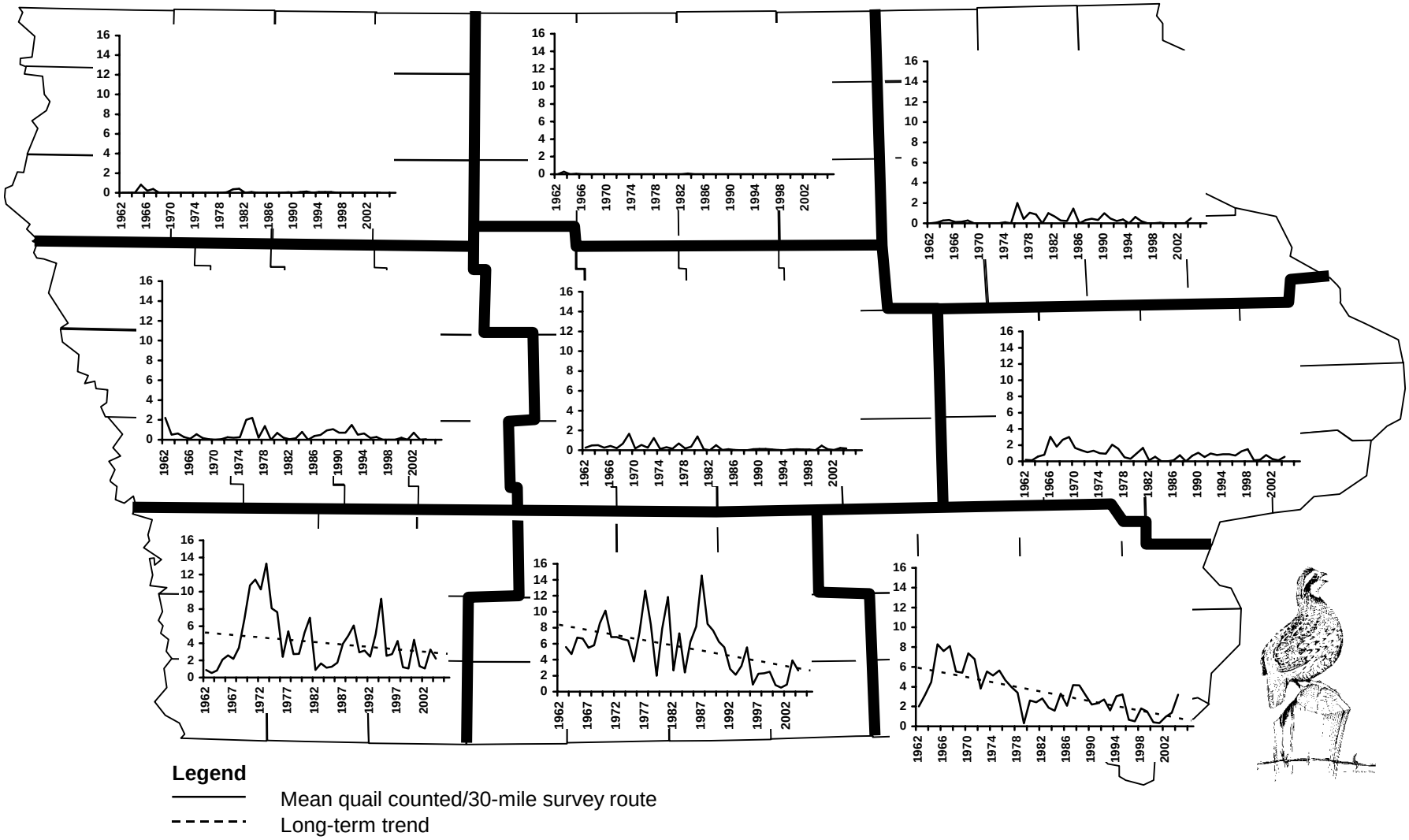


Figure 5.8 Regional trends in bobwhite quail numbers from the August roadside survey (1962-present).

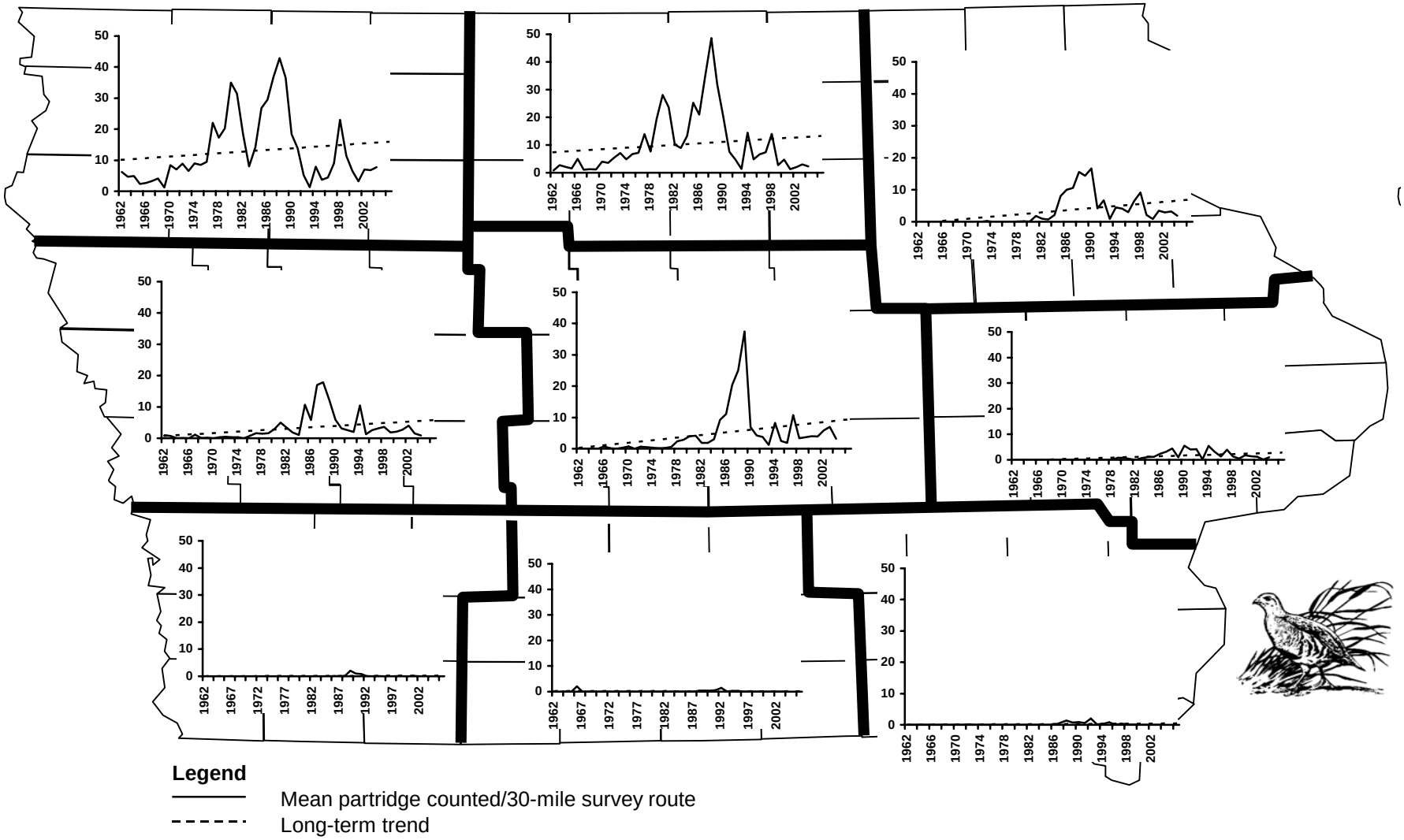


Figure 5.9 Regional trends in gray partridge numbers from the August roadside survey (1963-present).

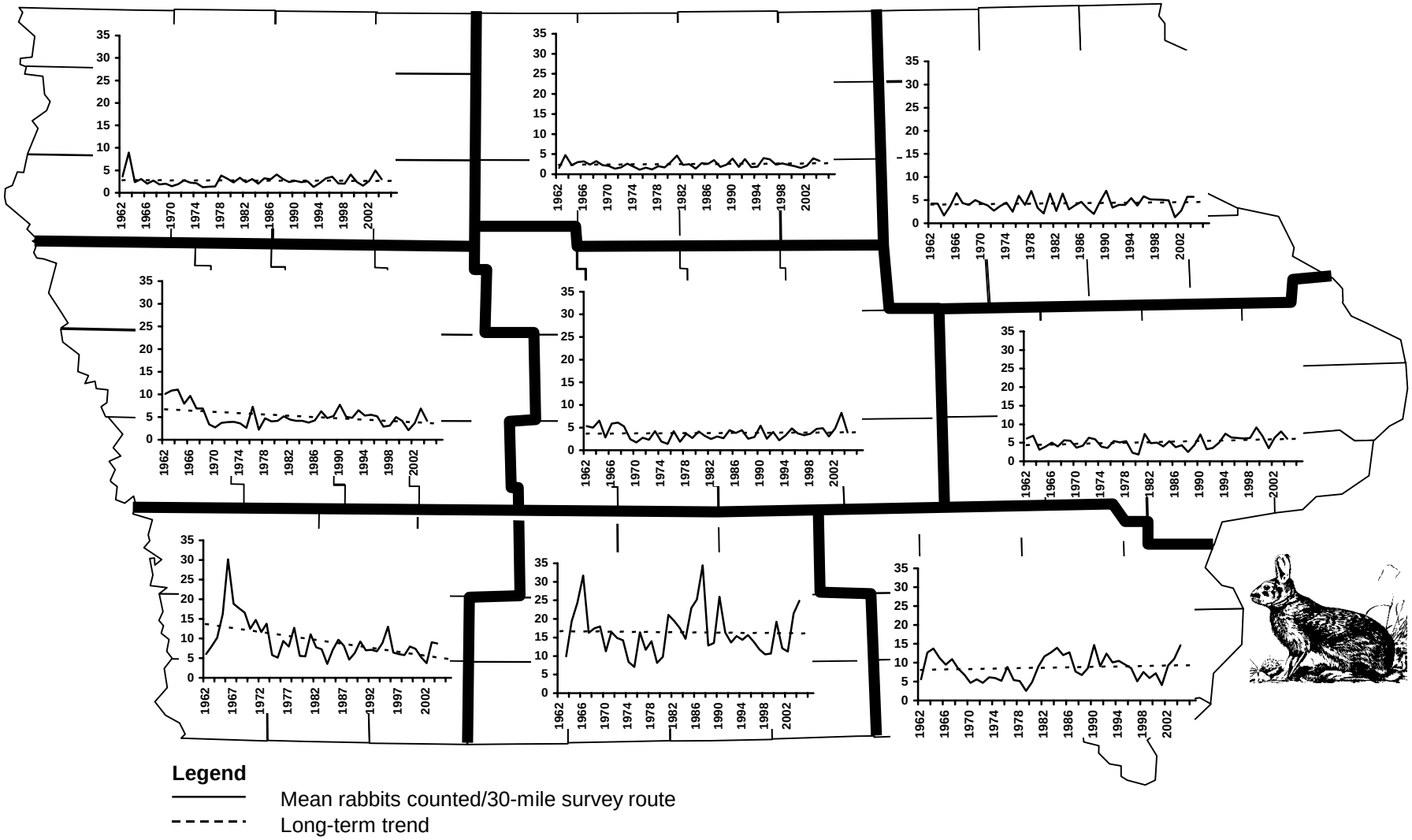


Figure 5.10 Regional trends in cottontail rabbit numbers from the August roadside survey (1962-present).

Figure 5.11 Sales of Iowa hunting licenses

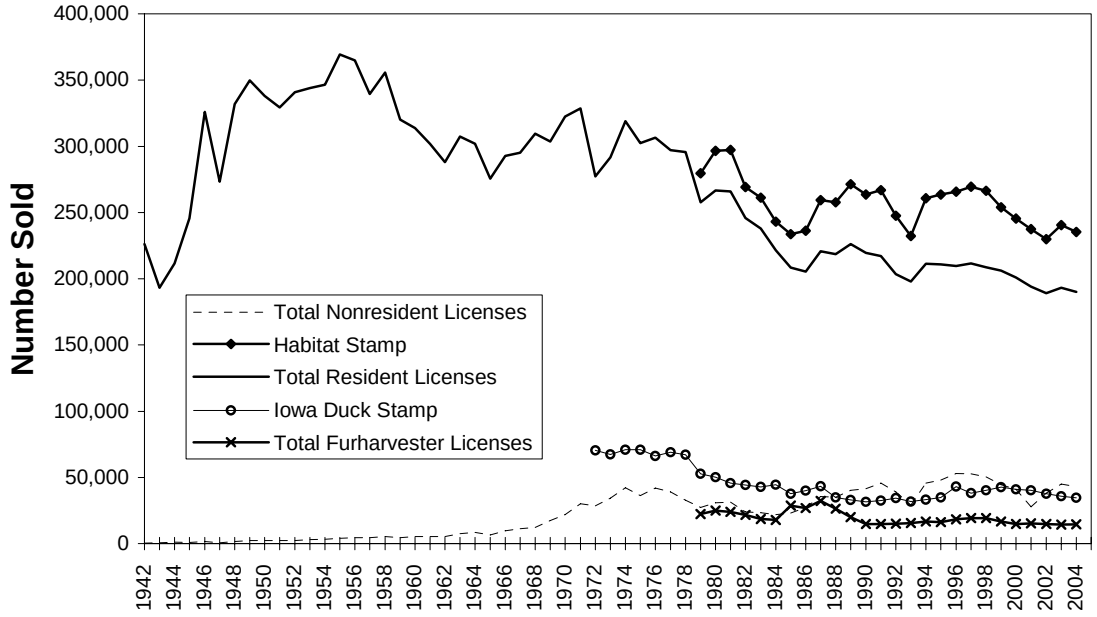


Figure 5.12 Estimated number of Iowa small-game hunters